

Chapter VII – A. Trails and Greenways

Life for two weeks on the mountaintops would show up many things about life during the other fifty weeks down below. –BENTON MACKAYE, *An Appalachian Trail: A Project in Regional Planning*, The Journal of the American Institute of Architects, 1921

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Trails & Greenways Findings

- A growing population, accelerating land development, increasing transportation costs and public health concerns increase demand for trails and greenways close to home.
- Studies indicate that trails have large, long-term economic benefits in both rural and urban areas.
- The growing complexity of trails and greenways demands better agency coordination and a defined, strategic approach from state and regional planners.
- A priority of the state trail program is to facilitate the development of state and regional, long-distance, multi-jurisdictional trunkline trails.
- Most localities report that they do not have an approved plan for trails outside of VDOT right-of-way. Although most planning districts and some counties have developed a plan for bicycle or pedestrian facilities within VDOT right-of-way, implementation has not occurred in many areas.
- Trail planners need access to a comprehensive statewide inventory of existing, planned and proposed trail opportunities, and the public needs more information about existing trails.
- There is a need at all levels of government to plan for a system of trails and greenways that provide a variety of leisure experiences to help avoid user conflict, connect gaps in the trail system, and attract new users. Trail design standards should provide for a range of trail experiences and types, and allow for an appropriate range of risk levels.
- There is a pervasive need for additional funds for trail planning, construction, marking, maintenance and promotion, and a particular need for funds to develop trail systems along corridors outside of VDOT rights-of-way.
- Opportunities for trails exist along many rail corridors in Virginia, but there is no process for accommodating recreational use of railroad property for trail crossings or trails that parallel rails.

- Uniform signage using a consistent trail assessment system will help users negotiate trails, particularly those that cross jurisdictional boundaries, and help promote trail use and identity.

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Trails & Greenways Recommendations

- Local governments should have a greenways and trails component in their comprehensive plan that provides for a variety of leisure trail experiences and promotes pedestrian and bicycle transportation alternatives.
- DCR should establish an institutional framework to support the implementation of this Plan, to include staff support and the reestablishment of a greenways and trails advisory committee to help develop a strategic plan for the state greenways and trails program.
- DCR –should establish a state trails inventory and partner with Virginia Tourism Corporation to both promote these trails on their Web site and evaluate their economic impacts.
- State, regional and local governments should include funds for trail development, management and maintenance in annual capital and operating budgets, and seek creative ways to provide incentive funding for trail development.
- State, regional and local governments should strengthen the public’s understanding of the connection between trails and public health and establish policies that support pedestrian and bicycle facilities in road construction and development/redevelopment projects.
- DCR should partner with Planning District Commissions to a) facilitate communications between trail providers, users, and policy makers, b) encourage the private sector to improve regional and statewide trail opportunities and support and c) focus on regional trail networks to establish a trunkline statewide trail system.
- DCR should work with local governments and trail sponsors to determine the final alignments and plans for major trunkline trail networks like the Trans-Virginia Southern Trail, East Coast Greenway, Potomac Heritage National Scenic Trail, Great Eastern Trail, and James River Heritage Trail to facilitate the adoption of these corridors in local comprehensive plans.
- DCR should partner with VDOT and DRPT to facilitate establishing a process for negotiating with rail companies to provide opportunities for trails along and across rail corridors.

- DCR should adopt and disseminate a uniform trail assessment system and coordinate the development of standard sign templates to help users negotiate multi-jurisdictional trails and encourage private and government entities to promote a consistent brand.
- Local and regional trail managers should provide information about their trail at trailheads, in brochures and on Web sites so that users can choose sections within their skill and capability levels.

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Introduction

The greenways and trails movement, as described by Robert Searns, has evolved through four distinct phases in the last century. Initially greenways were conceived as boulevards and parkways for scenic drives by carriage or car like the Skyline Drive, Monument Avenue in Richmond or the Colonial Parkway connecting Williamsburg to Yorktown. The greenway was the scenery one passed en route to a destination, or the excuse for Sunday drive. This social occasion allowed generally passive users to enjoy the view as they spent time together.

The idea of a trailway, which later evolved to greenway, was embraced by the Appalachian Trail Conference in 1937, and referred to an area dedicated to the interests of those on foot. Originally a mile on either side of the trail, this idea of a greenway was the broad swath of protected land that served as a buffer from the sights and sounds of civilization. The greenway provided an escape from civilization and an opportunity for spiritual growth and emotional healing as hikers tested their physical strength and endurance. Today, many hikers are challenged and enriched as they follow the scenic mountain corridors that have been preserved along this greenway through Virginia.

More recently, the idea of a greenway has been adapted for multi-purpose urban infrastructure, with narrower corridors that still serve to buffer and shade a variety of trail users on bikes, horses, and skates as well as on foot. The East Coast Greenway, proposed to span almost 3000 miles from Maine to Florida, aims to connect all the major cities of the East Coast along a continuous, off-road path. The rails-to-trails movement has created a nationwide network of these multipurpose trails from former rail lines. There are nearly 300 miles of rail-to-trail corridors in Virginia, including the 57-mile New River Trail in Southwestern Virginia and the 45-mile Washington and Old Dominion Trail in Northern Virginia. This concept of greenway includes the trail and the right-of-way through which it passes, generally less than 100 feet in width. Users may be seeking exercise, social opportunities or a chance to enjoy nature when they carve time for this active recreation out of their busy schedules.

Today, greenways capture all of these former uses as part of metropolitan networks and mega-trails that link to recreational areas, natural areas and other open space lands. Often used for both active and passive recreation as well as transportation, the greenway is also a tool for linking conservation lands as part of an extensive green infrastructure network. A greenway's ecological functions--buffering storm and flood waters and providing

migration routes for wildlife—are often the primary incentives for greenway development. A sustainable transportation system, where most people walk or bicycle to destinations and the inverse of current practice, relies upon the development of extensive greenway networks, particularly in urban areas. A good example of this type of network is the Potomac Heritage National Scenic Trail (PHNST), a partnership to develop and maintain a system of trails for recreation, transportation, health, and education. The PHNST connects the outstanding natural and cultural features along a 700-mile corridor of the Potomac River from the Chesapeake Bay to the Allegheny Highlands.

Virginia is very fortunate to possess such excellent examples of greenways for citizens to enjoy. Those who use these greenways appreciate their value—for the environment as well as transportation, exercise, education, and ecotourism. However, the social values are best expressed as greenways and trails become part of daily life--used routinely as a means of accessing community resources--with people heading to work or play and friends and neighbors exchanging greetings. This social interaction along the trail creates a sense of community, a real commodity in a transient world and part of improved quality of life offered by the greenways movement.

Photo 1

Greenways have evolved from simple hiking paths and scenic drives to complex, comprehensive trail systems. The Potomac Heritage National Scenic Trail network braids together parks, water trails, rail-trails, and parkways with connecting trails for hikers, cyclists and equestrians along the historic Potomac River.

Greenways and trails play an important role in building public support for green infrastructure planning. Accelerating issues related to chronic disease, air and water quality and transportation fuel widespread demand for these linear corridors. Recreation is also driving demand, because people want facilities that not only allow families to spend leisure time together, but are also available and convenient at all times of the day. The Virginia Outdoor Survey confirms that walking for pleasure is the most popular recreational pursuit in the state. The 2006 Virginia Outdoors Survey ranked walking for pleasure as the most popular activity based on percentage of households participating (72%). Visiting natural areas (44%), jogging (24%), bicycling (21%), hiking/backpacking (16%), nature study, horseback riding and fitness trail use were within the top 30 activities. The 2003 Roper survey reported the most popular recreation activity nationwide is walking for fitness/recreation, and bicycling, jogging and hiking all fell within the ten most popular activities. This survey also reported an interesting correlation between recreation participation and environmental attitudes, with those most concerned about the environment being especially active in recreation. By providing space for popular outdoor activities, greenways and trails create the means for citizens to experience the out-of-doors and get in touch with nature--in turn building support for natural resource conservation.

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Greenways are important...

- Because connecting homes to shops and offices is good for businesses and convenient for customers
- Because fewer cars mean fewer crowded roads and less air pollution
- Because trails, natural views and green spaces attract homebuyers
- Because walking on pathways is healthy for both the body and the mind
- Because people out walking promote community awareness while deterring crime
- Because trails cost less to build and maintain than many other recreational facilities, and can benefit everyone
- Because the whole family may participate, while enjoying each other's company and the outdoors

Source: Chesterfield County Brochure

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Economic Benefits of Greenways and Trails

The US Forest Service and the University of Georgia report that the Virginia Creeper Trail (VCT) users spent about \$2.5 million over the sample period (2003-2004) related to their recreation visits along this 35-mile scenic trail in rural southwestern Virginia. Of this amount, nonlocal visitors spent about \$1.2 million directly in the Washington and Grayson county economies. This nonlocal visitor spending in the area generated \$1.6 million in economic impacts and supported close to 30 jobs.

Photo 2

Trail users are generally educated, financially stable, personally responsible, energetic folks—looking for quality of life and an ability to do business in beautiful areas. Pictured are Bill and Marianne Swann and their wedding party, enjoying the twenty-plus-mile trail around Richmond built mostly by volunteers. Photo courtesy of Bill Swann.

Although access to the VCT is “free,” there is a substantial economic value that accrues to recreation visitors from access to the trail. Using conventional economic methods, it was determined that the net economic benefit to users of the VCT is between \$23 and \$38 per person per trip. These values can be aggregated across the estimated 100,870 primary-purpose trips per year leading to an estimated range of between \$2.3 million and \$3.9 million in net economic benefits to VCT users. (*The Virginia Creeper Trail: An Assessment of User Demographics, Preferences, and Economics, 2004*)

In the urbanized area of Northern Virginia, the estimated 1.7 million adult users of the 45-mile Washington and Old Dominion Trail (W&OD), spent \$12 million annually on expenses related to their recreational use of the trail. The estimated \$1.4 million in nonlocal spending generated about \$1.8 million in local economic impacts and supported 34 full-time job equivalents and generated about \$642,000 in personal income. The annual net economic benefit of trail access to users was between \$14.4 and \$21.6 million, and the vast majority of these net economic benefits accrue to northern Virginia residents.

(The Washington & Old Dominion Trail: An Assessment of User Demographics, Preferences, and Economics, 2004)

The National Park Service reports through the *Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors* and *The Impact of Rail-Trails* that there are various and numerous benefits to trail users, local landowners and trail communities. Although legitimate issues and concerns may be raised at the onset of many trail projects, studies indicate that such apprehensions are unwarranted. Residents of trail communities, as well as visitors, enjoy the benefits of trail use, along with the aesthetic beauty, protected open space, and in some instances, the higher property resale values typically found adjacent to trails.

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Economic Benefits Of Greenways

Real property values

Many studies demonstrate that parks, greenways and trails increase nearby property values, thereby increasing local tax revenues that offset greenway acquisition costs.

Expenditures by residents

Spending by local residents on greenway-related activities helps support recreation-oriented businesses and employment and all other businesses patronized by greenway and trail users.

Commercial users

Greenways often provide business opportunities for commercial activities such as equipment rentals and sales, lessons, and other recreation-related businesses.

Tourism

Greenways are often major tourist attractions, generating expenditures on lodging, food and recreation-oriented services while improving the overall appeal of a community to tourists and prospective residents.

Agency expenditures

The agency responsible for managing a river, trail or greenway can support local businesses by purchasing supplies and services. Jobs created by the managing agency may also help increase local employment opportunities.

Corporate relocation

Evidence shows that the quality of life within a community is an increasingly important factor in corporate relocation decisions. Greenways are often cited as important contributors to quality of life in a community.

Public cost reduction

The conservation of rivers, trails and greenways helps local governments and other public agencies reduce costs resulting from flooding and other natural hazards. The high cost of

chronic disease is a major contributing factor to exploding health-care costs and exercising on trails and greenways helps prevent chronic disease.

Intrinsic value

While greenways have many economic benefits, it is important to remember the intrinsic environmental and recreation value of making social and physical connections while preserving rivers, trails and other open space corridors.

Source: Adapted from *Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors*; National Park Service, 1990.

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Trail Survey Findings

A February 2006 survey was sent to local governments and planning district commissions for feedback on trail issues and problems. Survey results (see Appendix C) indicate that a lack of funding is the biggest challenge for trail planners, although difficulty acquiring the corridor and a general lack of political support were also problematic. For trail managers, a lack of funding for trail maintenance was clearly the biggest problem. For trail users, planning districts report that no trails close to home is the major problem; but local governments report the biggest problem is a lack of information on trails. Respondents to a 2006 survey by BikeWalk Virginia also reported that there was inadequate sharing of trail-related information, and the most sought-after user information was trail maps.

Regional Trail Systems

Asked to rank their organization's top need for trails, both regional planners and local governments responded that connected regional trail systems (trunkline trails) were most important. Local, regional and state planners should work together to realize this common goal. A combined effort is needed to mediate issues that arise when trails cross jurisdictional boundaries, to provide bicycle and pedestrian infrastructure (including signage and amenities) and to get information out to the public.

The East Coast Greenway (www.greenway.org), the Trans-Virginia Southern Trail, the Potomac Heritage National Scenic Trail (<http://www.nps.gov/pohe/>), the Great Eastern Trail (<http://www.greateasterntrail.org/>) and the James River Heritage Trail are five regional trail systems underway that will be primarily off-road. These proposed trails are made up of many smaller trails that are already in use. See the trail map for the general locations of these trunkline trail networks and a list of their existing component trails.

Photo 3

Former Governor Mark Warner celebrates the ground-breaking of the Virginia Capital Trail, a paved trail along historic Route 5 which will eventually connect Jamestown and Williamsburg to Richmond as part of the James River Heritage Trail network. Long distance trails are gateway industries—bringing people to an area where they will stay and visit other attractions.

The PHNST, a unit of the National Park System, has been the target of significant investments in funds, time and expertise by individuals, organizations and government agencies. With the completion of the Virginia PHNST Trail Development and Management Plan and A Concept Plan for the PHNST in Virginia's Lower Potomac Region, the stage has been set to accelerate progress on linking the pieces of this braided regional system. A braided trail references the interweaving of water, hiking, biking and equestrian trails throughout the trail corridor.

One-third of the Tuscarora Trail, a 250-mile trail through a less populated area of the Appalachian Mountains, remains unprotected as it passes through private property and along road shoulders. This trail takes on even greater significance as part of the planned Great Eastern Trail network, which will link existing trails from central Alabama to central New York. The Southeast Foot Trails Coalition and the Mid Atlantic Foot Trail Coalition are undertaking this project, which is being sponsored by the American Hiking Society.

The cooperation of local jurisdictions is essential for the protection and development of regional trails. Ultimately, state and regional planners need the support of local governments to actively pursue implementation of all trail, greenway, and bicycle plans.

Local Trail Planning

Survey results showed that both regional planners and local governments agree a lack of funding is the major problem for trail planners. The map on page ____ depicts the handful of local governments that have a formally adopted trails plan. The level of detail and related implementation of existing plans across the state reflects the political climate of the jurisdiction. With only a small percentage of existing plans approved and integrated into the locality's comprehensive plan, there is a risk that development will continue to occur without bicyclists and pedestrians in mind. Green infrastructure planning at the local level could increase the amount of trails and greenways that are integrated into development plans.

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Thomas Jefferson Planning District Commission Case Study

Within any given region, the priority placed upon trail planning is related to the depth of understanding for how trails benefit communities. The Thomas Jefferson Planning District includes the needs of walkers and cyclists in all of their transportation plans including safety studies, circulation plans, grants, long-range plans, transit plans, levels-of-quality guidelines, and disability-need studies and designs. They also provide local walkability workshops, regional greenways-and-trails forums, and have included \$6 million for walk/bike projects in the Metropolitan Planning Organization's long-range plan. The region's concentration of people interested in sustainability has led to the development of the United Jefferson Area Mobility Plan, with the overarching goal to create a balanced, multi-modal transportation network by improving connections throughout the region; improving mobility within neighborhoods, towns, and counties; and making transportation choices which help foster livable communities.

Photo 4

Walkable Community Workshops sponsored by the Robert Wood Johnson Foundation, Thomas Jefferson PDC, and Charlottesville-Albemarle Metropolitan Planning Organization helped identify issues and cooperatively determine a plan for making improvements to pedestrian facilities.

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Statewide Trail Planning

Statewide synthesis of existing local plans, many of which have not been formerly adopted, is a challenge for the development of a statewide trails and greenways plan. Both regional and local plans take many forms; along with mobility plans there are bicycle/pedestrian plans, greenway plans, water trail plans, bikeway plans, and open-space plans that incorporate trails. Although most planning districts have a bicycle and/or pedestrian plan for sidewalks and bicycles lanes or paths within VDOT's right-of-way, implementation has been inconsistent across the state.

Bicycle and Pedestrian Accommodations

With increasing interest in bicycling and walking, many localities are beginning or expanding efforts to include bicycle and pedestrian accommodations in their planning efforts. The Virginia Department of Transportation encourages bicycle and pedestrian planning as an element of transportation planning, and publishes a resource guide to assist local and regional planning agencies develop and implement bicycle plans. In 2004, the Commonwealth Transportation Board, which develops policy for VDOT, adopted the *Policy for Integrating Bicycle and Pedestrian Accommodations*, which establishes bicycling and walking as "fundamental transportation modes."

The policy establishes the principle that all highway construction projects must be approached with the presumption that they will accommodate cyclists and pedestrians. Specifics will be determined in the process of planning and designing individual projects. VDOT is currently involved in an extensive implementation effort to work this new approach into the agency's daily operations.

As with any planning process, the most important aspect of bicycle and pedestrian planning involves obtaining input from the public. Achieving a balance between conflicting demands on the transportation system is also essential. VDOT encourages localities to think in terms of enhancing connectivity, and improving corridors and networks. Many areas in Virginia have organized bicycling clubs that represent the interests of citizen cyclists and help gather and provide information. However, not all community bicycling needs are represented by clubs. Chambers of commerce and local tourism interests often advocate for bicycle and pedestrian accommodations to link points of interest, attractions, accommodations and restaurants. Furthermore, local governments attempting to reduce the number of vehicle trips made each day are interested in bicycle routes and walkways that encourage active living and link residential areas with schools, libraries, commercial centers, parks and employment centers.

Photo 5

The Remington Community Partnership in Fauquier County has developed an interactive map to highlight points of interest along the Tinpot Turn Bicycle Tour. Information about other tours is available online at <http://www.remingtonva.org/biking.html>

Bicycle and pedestrian plans should be integrated into the transportation elements of local comprehensive plans, and plans developed at the regional MPO, planning district commission (PDC), and state levels. Multimodal planning recognizes the importance of integrating non-motorized transportation planning with transit plans and parks and recreation plans (see chapter IX-B-6, Transportation Programs). To ensure that the improvements in a multimodal plan are carried out, implementation strategies must be developed, and the plan needs to be adopted by the locality or regional body. Facility design guidelines are provided in the *VDOT Road Design Manual*, the *AASHTO Guide for the Development of Bicycle Facilities*, and the *AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities*

Railroads and Trails

Some of Virginia's most popular and heavily used trails were once active railroads. As the automobile and the interstate highway system decreased use of railroads, unprofitable lines have been abandoned. Once the rails and ties are removed, the gravel surface remaining provides an excellent base on which to build multi-use trails. The Virginia Creeper Trail, New River Trail State Park and the Washington and Old Dominion Trail are all former railroads.

The recreational potential of railroad right-of-ways has long been recognized. Congress enacted the National Trails System Act in 1968 to establish a nationwide network of trails. The act provided direction to encourage use of abandoned rail corridors as trails. After 15 years, the number of rail trails developed on abandoned railroads remained small, as most railroads don't own all the land where their tracks lie. Instead, the railroads often have legal rights, or easements, to use the land of adjoining property owners. When the railroad abandons the rail line, these easements often are revoked, and the property

reverts to the adjoining landowners. Establishing a trail under these circumstances requires an agreement with the railroad and all adjacent landowners.

Congress addressed this problem in the *National Trails System Act Amendments* of 1983. Those amendments preclude a railroad's easement from lapsing if the right-of-way is used as a recreational trail. As a result, trail-use proponents now only must have a formal agreement with the railroad. Before abandonment is granted to a railroad, posted notices tell the public and all potentially affected persons of the request so that comments and appeals can be solicited. Trail users should respond to the notice and tell the railroad of their interest in the right-of-way as a trail.

Crisscrossing Virginia is an extensive system of more than 3,000 miles of operating railroads. Over the last 30 years, a substantial amount of this railroad mileage has been abandoned. While a few have been acquired for trail use and become very popular recreation resources, the majority of these corridors weren't acquired for recreational use because property ownership reverted to adjacent landowners or because there was no local support for converting them to trails.

Outside of abandonment, railroad companies usually discourage public use of railroad property because of concerns for the safety of their employees and the risk of liability created by inviting the public on to railroad property. In general, rail companies are reluctant to discuss trail crossings or rails-with-trails proposals. It may take General Assembly action to create an environment in Virginia where railroads will feel safe agreeing to rail-with-trail projects. Rails with trails are successful in other states, and these examples are illustrated in *Rails-with-Trails: Lessons Learned* published in 2002 by the Federal Highway Administration. A process for accommodating recreational use along active rail corridors needs to be established in Virginia.

The high-speed rail corridor, a proposed single-track corridor that will allow for high-speed freight and passenger service connecting Washington, DC to Raleigh, NC, is an opportunity for rail with trail through some sections of Virginia. Partnering with the Department of Rail and Public Transportation and the railroads for trail development will maximize the public value of these corridors. This coordinated effort could provide a route for the East Coast Greenway through the urban crescent.

Trail Users

Greenways should not all look alike, nor should each facility serve the same user group. One person may seek the solitude of a remote hike in the wilderness, while another wants to join neighbors exercising on a cushioned surface close to home. Someone else may prefer a safe paved path for the quickest possible commute to work or school. Others may wish to preserve a corridor's pristine natural resources, and exclude any recreational use. A well-planned system will meet diverse and expanding needs as new technologies bring additional uses and better communication expands the user demographic base.

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Mountain Biking

The International Mountain Bicycling Association (IMBA) www.imba.com has been a leader in setting standards for mountain biking around the world. IMBA sponsors trail construction field schools to help users and land managers learn to build trails that are safe to use and gentle on the environment. User ethics and responsibilities as well as trail construction techniques are disseminated through publications and training seminars. Many mountain biking clubs have formed throughout the state, and are employing IMBA's teachings in working with their public land managers to develop trail systems. Mountain Bike Virginia (<http://www.mountainbikevirginia.com/>) is the statewide organization.

DCR has signed a memorandum of understanding with IMBA that pledges both organizations will work closely in accomplishing common goals and objectives, look for opportunities to conduct IMBA Trailbuilding Schools, encourage collaboration to create, maintain and manage mountain biking opportunities where appropriate, acknowledge and promote mountain biking as a recreation option at public lands where appropriate, promote and support mountain bike related tourism in Virginia and promote mountain biking as a family activity with health benefits.

Photo 6

Pocahontas State Park offers a hands-on learning environment at an IMBA mechanized trail building workshop during the 2005 Governor's Conference on Greenways, Blueways and Trails, one of many educational initiatives sponsored by DCR.

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Bicycling

BikeWalk Virginia (<http://www.BikeWalkvirginia.org/>) and The Virginia Bicycling Federation (<http://www.vabike.org/>) work together to advocate for the interests of cyclists across the state. They support a number of local bike clubs and chapters to provide information and advocacy, lead organized rides, and promote public safety.

The Virginia Department of Transportation's Bicycle and Pedestrian Program strives to make bicycling and walking safer and more convenient for all Virginians. The program is charged with implementing the *Policy for Integrating Bicycle and Pedestrian Accommodations*, which recognizes bicycling and walking as "fundamental transportation modes". The program coordinator is based in the Transportation and Mobility Planning Division in the Central Office, and there is a coordinator in each of the nine VDOT district offices. The policy can be found online at www.virginiadot.org/bikepedpolicy.

Virginia is home to more of the United States Numbered Bicycle Route system than any other state. Since both USBR 1 and USBR 76 cross the state, Virginia hosts about 41 percent of the total USBR system. USBR 1 crosses the state north-south from Arlington to the North Carolina border near Kerr Reservoir, and USBR 76 crosses east-west from Yorktown to the Kentucky border in Dickenson County. These federal routes are officially recognized by AASHTO, the American Association of State Highway and

Transportation Officials. These routes are shown on VDOT's official County Maps, and signed in the field.

In addition, Virginia also hosts parts of three other long-distance bicycle routes recognized by Adventure Cycling Association, which is dedicated to establishing a national system of long-distance routes. The Trans-America Bicycle Trail crosses the country from Oregon to Virginia, and shares the same alignment as USBR 76 in Virginia. The Maine to Virginia Bicycle Route runs approximately 150 miles from Washington, D.C. to Richmond, Virginia, generally along the same alignment as USBR 1, and the Virginia to Florida Bicycle Route covers 130 miles from Richmond to the North Carolina state line at Suffolk.

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Equestrian trails

Trail riding is an increasingly popular recreational activity among Virginia horseback riders. The Virginia Horse Council (<http://www.virginiahorsecouncil.org/>) appointed a committee to establish direction and coordination of statewide equestrian trail development and maintenance activities. Participating clubs have formed working relationships with public and private land managers across the state to improve and maintain existing trails, as well as to establish new trail riding opportunities. The results of this successful initiative can be seen in the national forest, many state parks, state forests, and in local parks.

Photo 7

Equestrians gather for the opening of the first segment of the Tobacco Heritage Trail, a regional effort that will turn abandoned railroad rights-of-way in Mecklenburg, Brunswick and Halifax counties into trails for hikers, cyclists and horse and carriage riders. This trail is a component of the Trans-Virginia Southern Trail network.

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Hiking

The American Hiking Society advocates for the interests of hikers in Virginia as well as the rest of the nation. Although there is no statewide hiking organization, a number of active local and regional trail clubs maintain sections of the Appalachian Trail and other hiking trails across the Commonwealth. The Virginia Volkspport Association (<http://www.walkvirginia.com/>) promotes the spirit of walking and events designed to appeal to everyone of all ages.

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Motorized trails

The Virginia Off-Highway Vehicle Coalition (<http://www.vohvc.org/>) represents the interests of OHV users to establish and improve OHV opportunities in Virginia, through education, responsible land use, environmental sustainability, and the promotion of safe, friendly, family-oriented recreation. The Virginia Four-Wheel Drive Association (<http://www.va4wda.org/index.htm>) is a family-oriented, non-profit organization

promoting safe, responsible and fun four wheeling. These groups are interested in developing more trails for legal off-road use, particularly in the Eastern part of Virginia.

The U.S. Forest Service reports that one of the fastest growing forms of outdoor recreation involves the use of OHVs. OHV owners and users have risen sevenfold in less than three decades—from about 5 million in 1972 to 36 million in 2002. While only a small number of OHV users leave lasting traces on the land, this small percentage has created undesired impacts. Decreasing availability of open space outside public land and increased population growth and urbanization along with the adverse impacts of renegade OHV users has led the Forest Service to attribute unmanaged recreation as one of four major threats to our nation's forests and grasslands. Management of OHV use in the national forests is guided by specific policies and procedures. In November of 2005, the Forest Service released its Final Rule covering OHV use that prohibits OHVs and other motor vehicles on undesignated routes. The Final Rule provides that Forest Supervisors and District Rangers shall make actual designation of routes after receiving public input.

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Delfosse Trail Case Study

The Delfosse Trail was a joint project of Nelson County Parks and Recreation and the Delfosse Winery. The goal was to develop a trail that hikers and mountain bikers could share with All Terrain Vehicles. Built in just four months, this 5.5-mile trail is a great example of a public-private partnership, which will bring business to the winery and provide recreation for residents and tourists. To control the use of this resource, Nelson County will lead scheduled ATV rides, with the trail left open to hikers and mountain bikers during non-scheduled hours when the winery is open. This trail was built with a grant from the Recreational Trails Program.

Photo 8

The Delfosse Trail in beautiful Augusta County provides six-miles of forest fun for riders of all-terrain vehicles in conjunction with programmed events led by the local parks and recreation department. At other times, the trail is available for use by hikers and mountain bikers.

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User Feedback

Users report that there is a need for more diversity within trail systems, particularly for the skill level of the user. In many areas of the state where the public only has access to trails on federal land, the trails are generally primitive and appeal to advanced users. Some existing networks fail to provide many functional loops or less challenging trails for beginners or children. The International Mountain-Biking Association (IMBA) reports that 95 percent of existing trails in the Shenandoah region cater to advanced users only. As a result of funding shortfalls at the federal level, trails in national parks and forests have deteriorated, and users must often have advanced skill levels to negotiate them, limiting the enjoyment of these publicly funded assets. Mountain bicyclers report that trail conditions have significantly deteriorated in the national parks and forests. Many enthusiastic volunteers are drawn from new users, so trails for beginners are

important. Additional trails for beginners are desperately needed on public lands such as the George Washington and Jefferson National Forests, Shenandoah National Park, state parks and other locations where appropriate.

Other park facilities receive routine maintenance but trail maintenance and monitoring often falls primarily on volunteer groups. The Potomac Appalachian Trail Club maintains approximately 630 miles of hiking, biking and equestrian trails in Virginia. The International Mountain Bicycling Association, through its Virginia chapters, has logged an average of 6500 volunteer hours per year over the past two years. Roanoke Valley Greenways is currently tracking volunteer hours in a database (www.vast-network.org) that reports over 6000 volunteer hours. Similar efforts are being made statewide by a committed handful of volunteers for the benefit of all people who enjoy trails.

Many trail user groups report a lack of younger, newer members. This could be the result of an aging population and also indicative of a less active younger generation. As these new members replace retiring ranks of volunteers, there is a growing concern that existing ranks may be depleted in future years.

Trail Design and the Leisure Experience

When designing trails, it is important to remember that people use trails because they want to enjoy or challenge themselves, or to escape from hectic lives and become immersed in nature. Spiritual journeys are often made on trails, as people either seek reconnection with nature or the self-confidence that follows from reaching a personal goal. Although it is important to minimize risk, it is also important to design for the desired leisure experience. For trail users seeking solitude, skill challenges, adventure, or exercise-- an overbuilt trail can spoil the experience.

At the 2006 Robert Wood Johnson Foundation Active Living Research conference, presenters discussed the features that draw users to trails, particularly in urban areas. Trails with shade, scenic views, and opportunities to see wildlife, large trees, large grassy areas or water features will be used more often. Trails are also more likely to be used if they are perceived as safe and well maintained, and if there are trailside services, particularly food service, available. The number of destinations and the importance and proximity of destinations that can be reached by the trail also increases the amount of use. Design for amenities that draw users, especially parking, benches, bathrooms and water fountains.

Trail designers also need to know the types of use the trail should support, based upon input from the people who will be using and taking care of the trail. Guidelines or standards for trail development should support the experience(s) desired by these users. Some of these user groups have advocacy organizations that can be very helpful for reaching out to the volunteer network that supports the trail.

DCR has developed a guide for the organization, planning, and development

of local greenway and trails. The Greenways and Trails Toolbox can be downloaded from DCR's Web site at <http://www.dcr.virginia.gov/prr/docs/toolbox.pdf>

Subheading of Trail Design and the Leisure Experience

Trail Assessment, Classification and Marking

While levels of risk can vary, the risk should be communicated to the user. To communicate risk and other important information, trail assessment, classification and signage should be included in each project. Trail users grow accustomed to how trail signs convey information if there is uniformity in the way trails are assessed and marked. Virginia should adopt and disseminate a uniform trail assessment system to increase user safety and enjoyment while identifying and prioritizing maintenance, access and construction needs for the trail manager.

Trail managers should provide information about their trails that allows users to choose the trails within their skill and capability level. It is important for all users, but especially elderly or disabled users, to understand a specific trail's maximum grade and cross-slope, trail width, surface, obstacles and length before using the trail. The Universal Trail Assessment Process (UTAP-
<http://www.fhwa.dot.gov/environment/sidewalk2/sidewalks213.htm>) is a tool that land managers, agencies and individuals use to monitor, improve, and document trails--enabling informed trail choices. This information should be made available at trails heads, in brochures and on Web sites.

A comprehensive signage plan is needed to inform trail users about the safe and appropriate use of all facilities and to convey a sense of the place. The appeal and utility of a route is related to the quality, coherence, consistency and frequency of the signs along it. Good signage not only enhances the visitor's experience along the trail, it promotes the trail and conveys the community's economic vitality and civic pride.

Where trails cross jurisdictional boundaries, signs should remain consistent in design, color scheme and logo. Visitors should feel confident that they would not get lost along the route without a map. Clear signing toward and away from a trail system is as important as signs along each route. This alerts automobile traffic to watch out for self-powered traffic and advertises that an alternative to using the car is available.

European countries have developed good models for signing multi-jurisdictional trails. Directional signing for U.K.'s National Cycle Network uses one color for national routes, and another for regional routes. All signs have the user symbol (bicycle) and route number. At frequent locations along the route, signs include key destinations, directions and distances.

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KEY ELEMENTS OF SUCCESSFUL TRAIL SYSTEM PROJECTS

General

- Each project includes a grassroots support effort with enthusiastic people and agencies.
- The projects have a clear plan that illustrates what the individual/group would like to do and how they intend to achieve their desired goals.
- Partnerships exist and each partner has a defined role that is carried out
- There is access to funding and an understanding of how long-term maintenance and management will occur.

Major Criteria For a Quality Project

- The trail system is sensitive to both natural and cultural resources.
- The trail system generates revenue, either through compatible leased use of the corridor, or through concessions or other trail-related businesses.
- The trail system is a reflection of social responsibility and enhances the community, region, state, and/or country.

Criteria for Successful Trail System Development

- The system must be well planned, including phasing, long-term maintenance, and funding.
- The system clearly connects Point A to Point B and usually connects numerous points in-between.
- The trail system has a clear identity with a definitive name that attracts people and defines the trail's focus.
- The trail system is well signed, often with a special identity signage program.
- A well-designed and attractive map is readily available at numerous locations.
- Interpretation is provided (e.g., ranges from simple explanation on maps or at trailheads to more formal wayside exhibits or even visitor centers)
- Support service systems are available. This can range from highly sophisticated to primitive (e.g., trailheads, restrooms, campgrounds, lodging, restaurants, supply shops). Many of the most successful link to towns where diverse services are provided.

Adapted from *Innovative Non-motorized Trail Projects and Ideas*, Prepared for Colorado State Trails Committee, August 2000. Available online at

<http://www.americantrails.org/resources/planning/InnovativeTrails.pdf>

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Roles and Responsibilities

Federal-managed trails

Most of Virginia's existing long-distance hiking, horseback-riding, and public off-road motorized trails are on federal lands. The George Washington and Jefferson National Forests contain 2385 miles of system trails, including 375 miles of the Appalachian Trail.

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Most of the trails are non-motorized multi-use, allowing hikers, equestrians and mountain bikers. The forests also has 78 miles of motorized trails open to unlicensed motorized vehicles (ATV's and trail bikes). Shenandoah National Park contains 516 miles of trails, including 101 miles of the Appalachian Trail and approximately 200 miles of horse trails. Together, these two resources provide 2901 miles of backcountry trails.

In Eastern Virginia, Assateague Island National Seashore, the Great Dismal Swamp National Wildlife Refuge, Back Bay National Wildlife Refuge, Prince William Forest Park and the larger national battlefield parks all offer opportunities for trail users. The Colonial Parkway and the George Washington Memorial Parkway are popular bicycle trails.

The Appalachian Trail is unique because of its history of cooperative management. A quarter of the entire trail, 550 miles, runs through Virginia. For more than 75 years the many representatives of the Appalachian Trail Conservancy (ATC) have worked voluntarily with federal, state and local governments, as well as numerous individual landowners, to solve problems associated with the acquisition, development, administration, management and maintenance of the trail. The Appalachian Trail Conservancy and its member clubs manage the trail. Recognizing its importance, the Virginia General Assembly in the *Code of Virginia*, Chapter 10.1-203, as amended, designated the DCR as responsible for acquisition, administration and management of the trail in Virginia. DCR has a signed agreement with the ATC wherein DCR agrees to: review the trail's location on state-owned lands; ensure widespread understanding of the significance of the trail and the components of good stewardship; acquire lands or interests in lands to conserve trail values; delegate to the ATC and trail-maintaining clubs responsibility for developing, maintaining and monitoring state-owned trail corridor lands; be a liaison between the ATC and other state agencies; and, meet annually with representatives of the ATC to discuss management and concerns.

Subheading of Roles and Responsibilities

State-managed trails

Virginia's state parks offer more than 460 miles of trails, many of which connect to the extensive trail and gated roads system in adjacent state and national forests. New River Trail State Park is a 57-mile rail-trail stretching from Pulaski to Galax in Southwest Virginia. The park is a multi-use, non-motorized trail for use by hikers, bicyclists and equestrians. It is connected to the trails in the Mount Rogers National Recreation Area and to the Virginia Creeper Trail that leads to Abingdon. This trail system is almost 175 miles long and intersects many side trails. The Wilderness Road Trail in Lee County joins the Wilderness Road State Park with the Cumberland Gap National Historic Park and uses portions of an abandoned railroad. In addition to hiking trails, many parks have trails for horseback riding as well as trails designed specifically for mountain biking.

Virginia's Department of Transportation has a number of shared-use paths that run parallel to major roads. Since these are entirely within VDOT right of way, they are built and maintained by VDOT. Many of these paths, like the one beside the Fairfax County

Parkway, are located in Northern Virginia, where bicycle plans have been in place for many years.

Virginia's Department of Game and Inland Fisheries, within its wildlife management area system, maintains numerous access trails for hunting, fishing and other wildlife-related outdoor recreation. These trails are also open for hiking and horseback riding although it is not recommended during hunting season except on Sundays. The popular Virginia Birding and Wildlife Trail, a thematic driving trail that links approved sites across the state, celebrates the diversity of Virginia's natural habitat.

The Virginia Department of Forestry also maintains many trails in 17 state forests. The Zoar State Forest trails, the Willis River hiking and canoe trails in the Cumberland State Forest and the connector between the Cumberland and Appomattox-Buckingham State Forests are some of the more popular trails in use. Most state forests contain hiking trails (54 total miles) and an infrastructure of forest roads and trails, amounting to approximately 260 miles that are available for use by trail enthusiasts. Horseback riders have recognized the potential this system of gated roads offers and have worked with the state forester to build and maintain a system of horse trails in the Cumberland State, Appomattox Buckingham, and Prince Edward State Forests. Mountain bicyclists also use many of the same forest management roads as trails.

Other state-owned lands, such as colleges and universities, include trail systems. Students and the surrounding community heavily use many of these trails. University-owned lands that are not appurtenant to the main campus may have trail development potential and should be evaluated.

Subheading of Roles and Responsibilities

Local/regional-managed trails

Local and regional parks have established lengthy multi-use trails, some of which take advantage of unique corridors in densely populated areas. The W&OD Railroad Regional Park, a National Recreation Trail, follows the bed of the abandoned Washington and Old Dominion Railroad. Administered by the Northern Virginia Regional Park Authority, it extends 45 miles from Alexandria to Purcellville in Loudoun County. The Virginia Creeper Trail, another National Recreation Trail, is a multi-purpose trail constructed on an abandoned railroad right-of-way between the towns of Abingdon and Damascus and then through the National Forest to Whitetop Station. In the Roanoke Valley, trails have been developed along streams, utility corridors, abandoned railroads, and through every park and greenway in the region in their combined effort to connect their communities. In Fairfax and Arlington counties, many trails have been developed along stream valleys in designated environmental-quality corridors and stream-valley parks. Short foot trails, such as interpretive and walking trails five miles or shorter in length, are found in nearly all recreational areas and in many local parks throughout the commonwealth.

Many jurisdictions have a trail system component of their comprehensive plan. In some localities developers are required to construct trails in subdivisions and other developments that connect those trails to existing or proposed trails within the area.

Subheading of Roles and Responsibilities

Trails on private land

Privately owned corporate properties also may help meet trail needs. In some cases, trail recreation may suitably interface with management activities on lands owned by forest product companies, utility companies, mining companies or agricultural lands. Cooperative management programs for limited recreational use have been developed with Westvaco Corporation on some of its lands. For example, Westvaco Corporation maintains a 2.8-mile nature trail along Buffalo Creek in Bedford County that is used for recreational and environmental education purposes. Hundreds of miles of corporate forest roads, which provide access to timber, offer a wide variety of potential trail opportunities. User groups should work with the companies to help develop and maintain these trails.

Private individuals often voluntarily offer trails through their property. They may give an easement on a portion of their land or may allow access through an agreement with a governmental agency. In these instances, the landowner's liability is greatly limited (§29.1-509 of the Code of Virginia). Many local businesses have developed trails along their property, connecting to existing trails and providing key linkages for public trail systems. With more businesses realizing the value of trails for employees' physical and mental health, corporate trails are more numerous and should be included in local comprehensive trail plans. In addition, many developers realize that the incorporation of a trails system into their plans can help increase housing and office space values and boost sales. Private trails enhance the community and should connect into public systems.

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Federally Designated Trails-Virginia

National Recreation Trails

DeHart Mountain Trail
New River Trail State Park
Virginia Creeper Trail
Algonkian Regional Park Sanctuary Trail
The Massanutten Mountain Trail
Buffalo Creek Nature Area
Rivanna Trail
Bull Run-Occoquan Trail
Apple Orchard Falls
Hoop Hole
Sprouts Run
Jack-o'-Lantern Branch Heritage Trail
Washington and Old Dominion (W&OD) Trail
Wild Oak Trail
Cornelius Creek
Blackwater Creek
Cascades
Flat Top-Falling Water Cascade
Little Stony Creek
Mount Rogers
Mountain Laurel
Petersburg Battlefield
Pine Mountain
Rock Castle Gorge
Seashore State Park
Spotsylvania Battlefield
Potomac River Water Trail

National Historic and Scenic Trails

Appalachian National Scenic Trail
Cascades National Scenic Trail
Potomac Heritage National Scenic Trail
Overmountain Victory National Historic Trail
Daniel Boone National Historic Trail
(Wilderness Road)

National Millennium Trail

East Coast Greenway
Appalachian National Scenic Trail
Civil War Discovery Trail
The Underground Railroad

Millennium Legacy Trail

New River Trail State Park

Community Millennium Trail

James River Heritage Trail (Blackwater Creek)
African American Trails-Charlottesville
Alexandria Heritage Trail-Alexandria
Bay View Trail-Lorton
Bicentennial Trail-Blacksburg
Bridle Trails-Sky Meadows State Park-Paris
Civil War Discovery Trail-Arlington
Fairfax Cross County Trail
Fluvanna Heritage Trail-Palmyra
Hanging Rock Battlefield Trail-Roanoke
Heart of Appalachia Bike Route and Scenic Drive-
Big Stone Gap
Huckleberry Trail-Blacksburg
New River Trail State Park-Foster Falls
Radford Pathways Network Riverway-Radford
Reston Pathway System-Reston
Shady Ridge Trail-Dublin
The Battlefield Trail-Randolph
The Williamsburg Historic Necklace-Williamsburg
Thomas Jefferson Parkway-Charlottesville
Turtle Island Trail-Huddleston
Twin Pinnacle Trail-Mouth of Wilson
Virginia Civil War Trails-Richmond
Washington & Old Dominion Railroad Regional
Park-Arlington
White Oak Trail-Newport News
Wytheville Historic District

Tourism-Recognized Trails in Virginia

Virginia Heritage Trails

Virginia Creeper Trail
Virginia Civil Wars Trails
The Crooked Road-Virginia's Heritage Music Trail
The Captain John Smith Trail
The Jamestown Discovery Trail
Civil Rights in Education Heritage Trail
Virginia's Retreat

Virginia Nature Trails

Virginia's Birding & Wildlife Trail
Virginia's Appalachian Trail
The Virginia Creeper National Recreation Trail.

Virginia Winery Trails

The Blue Ridge WineWay
The Monticello Wine Trail
Loudoun's Wine Trail
The Heart of Virginia Wine Trail

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Subheading of Roles and Responsibilities

The Role for Local Governments

Since most projects evolve at the local level, all jurisdictions should have a trails component in their comprehensive plan that includes a variety of trail types to meet different user needs. Planners should retrofit local transportation plans to include bicycle and pedestrian accommodations. In Fairfax County, a greenways plan has required developers to connect planned developments to existing and proposed elements of the trail plan. Over the years, this has resulted in an extensive system and preservation of stream valleys. Incorporating trails and greenways into residential, commercial and industrial construction is an efficient way to build trail infrastructure and it complements the public investment. Maintenance costs can also be shared with homeowner's associations, businesses and other stakeholders if plans, standards and policies are in place.

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Creative Local Funding

A variety of approaches have been used successfully in Virginia to fund trail development projects. Local governments may want to follow Augusta County's approach and implement a capital improvement incentive program that provides a match for private dollars committed to trail development. Augusta County has leveraged \$2 million in public funds with over \$4 million from the community since their match program was initiated in the late 1980s. In Chesterfield County, use of the sheriff's prisoner work force to build trails and bridges provides a community amenity while inmates receive training in carpentry and trail construction.

Photo 9

Built to serve as a demonstration project for developers who proffer trails for new subdivisions, the Government Center Trail in Chesterfield will eventually connect surrounding neighborhoods to a library, three schools, and the county government complex.

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To provide for the capital planning and management of trails within a city or county, planners should identify current gaps in information. To create plans that address more than just short-term, day-to-day operations, trail managers must have data on existing trail inventory, the condition of trails, what they are used for, what investments need to be made, how these investments should be prioritized and how a rational funding process can be implemented. Answering these questions is critical to the success of a comprehensive capital planning program that addresses the full spectrum of trail issues from budgeting and financing to construction, maintenance and management.

To maximize trail promotion efforts, local governments should initiate efforts to have local trails designated as part of larger systems where appropriate. This may bring additional resources for maintenance as well through an expanded user base. The Occoquan Trail in Bull Run, an 18-mile hiking and equestrian trail, has recently been

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designated as a National Recreation Trail. This trail will be publicized on the American Trails Web site, www.americantrails.org, and receive markers to post along the trail.

Subheading of Roles and Responsibilities

The Role of State Government

State agencies play many different contributing roles related to greenways and trails, as is illustrated in the table on the next page. Project leaders should have an understanding of the various roles as they move forward with trail development. As greenways continue to evolve, coordination of the related agencies and organizations becomes more complex. Backed by thoughtful planning, projects can draw on the strengths of these agencies as opportunities for partnerships emerge.

Subheading Role of State Government

DCR's Greenways and Trails Program

DCR is tasked by the Code of Virginia to develop a statewide system of trails. DCR does this in coordination with the various state agencies and organizations that are stakeholders in trail planning and development. DCR also provides assistance to communities to identify, plan and develop greenways through technical assistance and educational outreach. A trails and greenways strategic plan will be developed to prioritize the recommendations from the Virginia Outdoors Plan. The strategic plan is essential to develop action steps and promote partnerships for the success of the state program. An advisory committee will be appointed to assist with the development of the strategic plan.

Subheading Role of State Government

Comprehensive Virginia Greenways and Trails Plan

At this point, both DCR and VDOT lack a comprehensive plan for greenways and trails or bike and pedestrian facilities. Roles and responsibilities are not well defined, and there is a need for better communication with stakeholders. When the state trail inventory and database is updated, and additional local or regional plans are complete, the stage will be set for developing a comprehensive Virginia greenways and trails plan. Comprehensive planning is an attempt to establish guidelines for the future growth of the Commonwealth's greenway system. As the term "comprehensive" suggests, this is an all-inclusive approach to addressing the issue of how greenways will evolve in our communities. A comprehensive plan is the formal document produced through this process, and is designed to serve as a guide for decisions about greenway development. The plan is an instrument to be used by community leaders who establish the policies and make the decisions regarding the physical development of greenways. This plan should be a comprehensive, long-range, general guidance instrument that focuses on physical development and relates physical design proposals to community goals and social and economic policies. A sustained and cooperative effort is important to realize the vision of a statewide network of trails and greenways connecting the Commonwealth.

Photo 10

The new Sugarland Run Trail in Herndon connects apartments and single-family homes to nearby long-distance trails. Residents can now choose to bike, walk or jog to shops, businesses, and schools as part of their daily routine.

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Opportunities for Grant Funding or other Partnerships

	STATE AGENCY																				
	VDOT			VDOT/DCR		DCR					VA Tech	DHR	Tourism	DGIF	DOF	DEQ	VDH	DMV			
Partnership Opportunity	Safe Routes to Schools	Enhancements	MPO/Planning	Maintenance	Scenic Byways	Recreation Access	Recreational Trails	LWCF	VOF	PCO	CBLA	Community Design Assistance Center	Rehabilitation Tax Credits	Web site	Birding Trail	Urban & Community Forestry	Coastal Zone	Chesapeake Bay	Healthy Pathways	Injury Prevention	Bike/Ped Safety
Community Input Meetings	X			X								X									
Walkable Community Audit	X			X																	
Greenway Planning												X				X					
Bike/Ped Mobility Planning	X		X	X																	
Trail Construction		X		X			X	X													
Sidewalk Construction	X	X		X																	
Bike lane Construction	X	X		X	X	X															
Interpretive Signs		X		X											X						
Landscaping/ Beautification		X		X																	
Riparian Restoration		X									X						X	X			
Open Space Preservation									X		X						X	X			
Cultural Preservation		X											X								
Trail Renovation				X			X														
Promotion	X			X						X				X							
Environmental Education										X					X		X	X			
Safety	X	X		X																X	X

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For Additional Information

The Department of Conservation and Recreation provides technical assistance to agencies and organizations interested in developing any of the different types of trails identified in this section. The Virginia Greenways and Trails Toolbox has been developed by DCR to assist trail proponents, planners and developers.

In addition to DCR's technical assistance, the Virginia Department of Transportation (VDOT) provides technical assistance in the development of pedestrian and bicycle accommodations and in planning the bicycle components of community transportation plans.

The National Park Service's Rivers and Trails Conservation Assistance Program provides publications and technical assistance for greenways, blueway and trails projects.

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Virginia Department of Transportation

Bicycling and Walking

<http://www.virginiadot.org/bikeped>

Transportation Enhancement Programs

<http://www.virginiadot.org/projects/pr-enhancegrants.asp>

Environmental Programs

<http://www.virginiadot.org/projects/pr-environmental.asp>

National Park Service Rivers, Trails and Conservation Assistance Program

Philadelphia Regional Office: <http://www.nps.gov/phso/rtca/>

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[Insert Maps](#)-Existing & Proposed Trails, Status of Trail Planning

References

BikeWalk Survey

DCR Survey of Local Governments

DCR Survey of Planning District Commissions

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Chapter VII - B: Blueways and Water Access

Water has no taste, no color, no odor; it cannot be defined, art relished while ever mysterious. Not necessary to life, but rather life itself. It fills us with a gratification that exceeds the delight of the senses. - ANTOINE DE SAINT-EXUPERY (1900-1944), *Wind, Sand, and Stars*, 1939

Whether on Virginia's Chesapeake Bay, Atlantic Ocean, or the Commonwealth's lakes, rivers or streams, recreational waters are places of solitude, restful settings for picnicking, walking, jogging, sunbathing, swimming, fishing, surfing, boating, sail-boarding and camping. Because Virginia is so geographically diverse, the *Virginia Outdoors Plan* accounts for the many recreational areas in and along natural and man-made bodies of water.

Local governments should be more involved in providing water access opportunities. City, county, and town governments should take the initiative to provide access areas and facilities on those bays, rivers and streams of primary interest to their own citizenry. State and federal agencies could concentrate on access to rivers constituting recreational resources of greater than local significance. A significant opportunity exists locally for public/private cooperation in the provision of water access. Park and recreation planning officials should identify corporate owners of riparian lands in their localities and determine their willingness to make land available for the development of water access facilities.

Water Access Findings

- Increasingly heavy use of popular water resources is beginning to result in conditions of overcrowding, over fishing, trespassing, littering and conflicts between user types.
- There are many opportunities for water access utilizing abandoned ferry landing sites and bridge crossings.
- The General Assembly authorized the establishment of Public Access Authorities on the Northern Neck and Middle Peninsula to help address the need for additional access to waters of the state.
- The Chesapeake Bay Agreement calls for an increase of 30 percent (for a total of 66 sites) in the tidal region of Virginia by 2010. Since 2000, 14 public water access sites have been added.
- With the growing popularity of water based activities (boating, fishing and swimming) conflicts between users and the railroad industry are on the rise as a result of the proximity of numerous rail line s adjacent to Virginia's river corridors.
- Law enforcement for water access sites and along water bodies is essential to successful recreational use of Virginia's waters.

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Water Access

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Based on the 2006 Virginia Outdoors Survey over 50% of the public surveyed felt the most needed outdoor recreation opportunities include public access to state waters for boating fishing swimming and beach use. Participation rates for activities involving water access are listed below.

Activity	Virginia Household Participation Rate
Sunbathing	36.4%
<u>Swimming</u>	
Outdoor Pool	61.0%
Indoor Pool	40.2%
Lake	22.3%
River	18.2%
Chesapeake Bay	18.1%
Other Place	34.7%
<u>Boating</u>	
Canoeing and Kayaking	9.3%
Power Boating	8.4%
Tubing	4.9%
Jet skiing/Personal Watercraft	4.1%
Water skiing	4.0%
Sailing/Sailboarding	3.5%
Rafting	2%
<u>Fishing</u>	
Freshwater Fishing	19.9%
Saltwater Fishing	15.4%

(2006 Virginia Outdoors Survey)

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Water Access Recommendations

- Wherever a renovation, relocation or development project is planned for a highway that crosses a recreational body of water, it should be evaluated to determine its suitability for public access development.
- Minimum development standards for public water access sites should be identified with consideration for signage, maintenance, trash, parking and public restroom facilities in high use areas.
- Public water access should be mapped west of the Bay area using an interactive GIS system like Coastal GEMS.

- Areas where public access to water has historically existed but is temporarily hindered by road improvement should remain open to public access after the road improvements are in place.
- Users need to cooperate with one another to resolve conflicts and maximize use of the water resource. Outfitters, users and local government officials should consider developing management plans to address problems such as: user conflicts, trespassing, litter, noise, and sanitation issues on blueways and on public beaches.
- Identify old ferry crossing/landing sites and bridge sites that might provide opportunities for water access and water related recreation, particularly in the coastal area of Virginia.
- Provide an additional 49 water access points in the Chesapeake Bay watershed in Virginia to meet the commitments of the Chesapeake Bay Agreement.
- Identify and increase water access opportunities to Virginia's southern rivers.
- Develop partnership plans with local law enforcement to establish an in-house center of expertise that enable application of limited law enforcement resources at water access sites to facilitate successful recreation opportunities.

Beach Access Findings

- The 2000 *Chesapeake Bay Agreement* calls for an additional 66 public water access sites in Virginia by 2010 and 500 miles of water trails throughout the bay region by 2005.
- Swimming, sunbathing, fishing, and boating are the 5th, 6th, 7th, and 10th most popular outdoor recreational activities, respectively, according to the 2006 *Virginia Outdoors Survey*.
- A 2001 Board on Conservation and Development of Public Beaches (Public Beach Board) survey identified the need for \$80 million to maintain and manage locally owned public beaches for the next 10 years. The survey further indicated the need for an additional \$6 million for the acquisition of beach-related linear parks, trails, docks/piers and other improvements during the same period of time.
- There are currently 29 miles of public tidal beachfront land in Virginia.
- Availability and protection of public access to the commonwealth's waters is a priority to meet citizens' recreational demands.
- Less than 1% of Virginia's shoreline is in the public estate.

Beach Access Recommendations

- Federal, state and local governmental agencies should continue acquiring and developing water and beach access sites for the public's use and enjoyment.

- Cooperative agreements among localities and other agencies, as well as private landowners, are encouraged in order to meet the increasing need for public access to beaches and other water-related recreational resources.
- State natural resource agencies, in cooperation with localities, should identify management strategies to make additional waterfront resources available for public use.
- All agencies should provide adequate support facilities and services, such as restrooms, concessions, parking and maintenance at existing public water and beach access areas.
- Encourage coordination with all federal agencies, including the Department of Defense to open additional federal lands for appropriate public use.
- Public agencies need to maintain access to existing public beaches that may be jeopardized by changes in land use or development activities.

Water Trail/Blueways Findings

- Water trails are popular recreational resources that provide access to the public waters of the state and support local economies.
- Adequate support facilities at reasonable intervals support proper use and maintenance of water trails as good neighbors.
- There is tremendous educational opportunity with water trails for people to learn about local and regional history.
- Water trail maps provide an opportunity for resource managers to remind the user about stewardship responsibilities and outdoor ethics.
- NOAA Chesapeake Interpretive Buoy project will revolutionize how water trails are marked and used. The buoys will collect real-time data and emit historical data (see <http://noaa.chesapeakebay.net/CbayBuoySystem.aspx>)
- The Coastal GEMS program maps water trails.
- Since 2000, 1,669 miles of water trail have been added through the Bay region.
- The Potomac Heritage National Scenic Trail is one of twenty-two national scenic and historic trail corridors in the United States.
- The National Park Service is studying the feasibility of designating parts of the Chesapeake Bay a National Historic Water Trail commemorating the explorations of Captain John Smith. If approved, the Captain John Smith Trail would be the first water trail to receive this designation.

Water Trail/Blueways Recommendations

- The navigable rivers of the state should be managed as water trails. Public access areas and support facilities should be developed at appropriate intervals along these rivers. Brochures

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should be developed that map blueway access points, use areas, campsites, hazards and source for flow level data.

- DCR should develop a water trail feasibility and assessment toolbox for local governments and non profit organizations. This toolbox should include assessment criteria for water trails to measure the feasibility of establishing water trails, minimize user conflicts and consider the carrying capacity of the resource. These criteria should be applied in developing regional priorities for water trail implementation.
- DCR should work with local and regional representatives to produce brochures/maps for each river showing access points, day use and camping areas, re-supply points, hazards, points of interest along the river, and other trip planning information and integrate this information expanding the Coastal GEMS program.
- Develop an improved system for reporting river levels throughout the state. Ideally, these reports should be available by telephone and on the internet for each river segment included in an established water trail.
- Post signs at each public access area showing the range of safe river use by experience class.
- Install signs for boaters on waterway bridges that identify the road crossing the bridge.
- Local jurisdictions should encourage both private and public landowners to operate rest stops and boat-in-only campgrounds where needed on those areas of Virginia rivers that are capable of accommodating such use.
- Local, regional and state water trail supporters should work with the railroad industry to develop criteria and a process for evaluating and implementing access sites over and/or adjacent to railroad rights-of-way along Virginia's rivers and streams.
- DCR and the regional PDCs should work with the American Canoe Association and other not for profit organizations to increase awareness and market the benefits of water trails and water access.
- A source for funding the development of access points and support facilities along water trails needs to be established that is an addition to federal motorboat access funds.
- A system of measuring river miles in collaboration with other states and the Corps of Engineers should be established.
- Implement the goals for the Potomac Heritage National Scenic Trail (PHNST) in Virginia's Lower Potomac River corridor.
- Continue to support the Captain John Smith National Historic Water Trail in Virginia.

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America's Waterway Watch

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Blueways-Public Water access101906.doc

www.americaswaterwaywatch.org

To report suspicious activity, call the National Response Center 800-424-8802 or 877-24WATCH. In case of immediate danger to life or property call 9-1-1 or Marine Channel 16.

America's coasts, rivers bridges, tunnels, ports, ships, military bases and waterside industries may be the terrorists' next targets. Though waterway security is better than ever with more than ____ miles of shoreline in Virginia and over ____ square miles of water, and approximately ____ recreational boats, the Coast Guard and local first responders cannot do the job alone.

America's Waterway Watch is a public outreach program, encouraging participants to simply report suspicious activity to the Coast Guard and/or other law enforcement agencies. America's Waterway Watch encourages recreational users to adopt a heightened sensitivity toward unusual events or suspicious behavior encountered around ports, docks, marinas, river shorelines, reservoirs, beaches and waterfront communities.

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Beaches

Beaches are places of solitude, restful settings for picnicking, walking, jogging, sunbathing, swimming, fishing, surfing, sailboarding and camping. Because Virginia is so geographically diverse, the *Virginia Outdoors Plan* accounts for coastal beaches, as well as man-made beaches on ponds, lakes and along natural bodies of water.

Availability and protection of public access to the Commonwealth's beaches is a priority to meet citizens' recreational demands since numerous activities complement their use. The statewide beach inventory shows approximately 2,047 acres of beach available for public access, including beaches in coastal areas, as well as those located on lakes, streams and rivers west of the fall line. Man-made and natural beaches, including those enhanced by beach nourishment, are also included.

A beach is defined as a strip of sand or gravel along the shore separating land from water. According to the standards listed in the *Virginia Outdoors Plan*, a piece of land greater than 25 feet in width between the dune or bank and landward of the mean high tide or normal high water may effectively function as a recreational beach. Due to their dynamic nature, most beaches do not maintain a constant shoreline profile.

Virginia's tidal beaches are predominantly on the lower Chesapeake Bay and Atlantic Ocean. Beaches on the Bay and on lower sections of rivers tend to be sandy, while those on the upper reaches of the rivers may have a thin layer of sand over a mud bottom. Other beaches listed in the Virginia inventory include a few sand and gravel bars along river corridors and man-made beaches created on lakes and ponds. Standards for beach design for public access are available in the *Chesapeake Bay Area Public Access Technical Assistance Report* published in October 1990 and available from the Department of Conservation and Recreation.

Beach resources are limited and ever-changing. Because beaches are in high demand for human recreational uses and also provide habitat for a variety of species, balanced planning efforts for beaches are essential. Management of beach resources for environmental and recreational reasons becomes increasingly important as more development occurs along Virginia's shoreline.

The dynamics of non-coastal beaches are not as intense as those beaches located along the Atlantic Ocean, the Chesapeake Bay, and the commonwealth's tidal tributaries. Often these beaches are in recreational areas and parks that also offer camping, boating, fishing and hiking. The design of man-made beaches should consider the optimum use of the planned facility, and safe swimming conditions should be a priority. Avoiding potential use conflicts between boaters and fishermen is essential in locating swimming beaches in recreational areas.

The 2006 *Virginia Outdoors Survey* indicates that 44% of the Commonwealth's population sunbathe and relax at the beach. Sunbathing at beaches is ranked as the fourth most popular outdoor recreation activity in Virginia. Though the statewide inventory of beaches is 2,047 acres and statewide demand is over 1,883 acres, which shows a surplus of beach access, the surplus of beaches in the commonwealth does not take into account that access to beaches such as Back Bay National Wildlife Refuge, Fort Story and other military sites, as well as False Cape State Park is very limited. Of the people using the beaches, 73% require a public beach. Maintaining the maximum beach access and increasing the beach size in Virginia's state parks ensures maximum accessibility to state-owned beaches.

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Beaches Open to the Public in State Parks

Douthat State Park
Hungry Mother State Park
Bear Creek Lake State Park
Twin Lakes State Park
Fairy Stone State Park
Kiptopeke State Park
Smith Mountain Lake State Park
Lake Anna State Park
Breaks Interstate Park
Holliday Lake State Park
Westmoreland State Park
First Landing State Park

Chippokes Plantation State Park, Hughlett Point and William B. Trower Bayshore Natural Area Preserves, and Parkers Marsh Natural Area also have beaches; however, recreational use is not encouraged at these sites because of the sensitivity of the beach environments.

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By all accounts, there is much less public access to beaches than needed to meet demand indicated in the survey's demand/supply/needs analysis. Much of the suitable beachfront in the Tidewater, Virginia area is private or in military use, and is unavailable for general public use. The only regions in which the supply of beaches meets the demand of residents is in regions 17 (Northern Neck), 18 (Middle Peninsula), 22 (Accomack), and 23 (Hampton Roads) which make up the coastal regions. Even here, there is actually a deficit in available beach when one considers the large influx of seasonal tourists specifically visiting to enjoy the shore and its adjacent waters. Virginia Beach leads the commonwealth with more than 13 miles of the state's total 29.3 miles of public tidal beaches.

In 2001, the Board on Conservation and Development of Public Beaches conducted a survey of localities that manage beaches. Survey results identified the need for \$80 million to maintain and manage these resources for the next 10 years. The survey further identified the need for an additional \$6 million for the acquisition of beach-related linear parks, trails, docks/piers and other improvements for the same period of time.

Shoreline erosion of beaches may affect their suitability for recreation. The Department of Conservation and Recreation lends technical assistance for reducing shoreline erosion and enhancing recreational beach quality. If a beach is a locally owned public beach as defined by the *Code of Virginia*, assistance is provided by the Board on Conservation and Development of Public Beaches. The beach board was created by the 1980 General Assembly to administer a 50/50 matching grant fund to localities for enhancing public beaches. DCR staff provides scientific, engineering and administrative assistance to the board. There are approximately 29 miles of public tidal beach identified by the board, as shown in the following table.

TABLE 1
PUBLIC TIDAL BEACHES

LOCALITY	SITE/LOCATION	MILES	FEET
Cape Charles	Cape Charles	0.500	2,640
Colonial Beach	Castlewood Park Central Beach Total:	2.500	13,200
Gloucester	Gloucester Point	0.18	975
Hampton	Buckroe Grandview Salt Ponds Total:	0.760 2.460 .760 3.980	4,000 13,000 4,000 21,000
King George	Wayside Park Beach	0.27	1,400
Mathews	Diggs	0.17	900
Middlesex	Canoe House Landing	0.04	185
Newport News	Anderson Park Hilton Riverfront Park Huntington Park Lincoln-King Park Total:	0.280 0.100 0.100 0.280 0.580	1,500 500 550 1,500 4,050
Norfolk	Willoughby Spit to East Ocean View	7.40	39,072
Northumberland	Vir-Mar Beach	0.02	80
Stafford	Aqua-Po Beach	0.300	1,580
Virginia Beach	Croatan Beach Ocean Park Resort Beach	0.82 1.030 3.330	4,330 5,438 17,600

	Resort Beach, North Total:	2.670 13.05	14,080 68,904
West Point	Beach Park	0.01	50
York	Yorktown Beach	0.23	1,215
TOTALS:	14	29.41	155,251

public beaches as defined under the Public Beach Conservation and Development Act.

Boating Access to Waters of the State

Tidal water access

Almost 2,400 square miles of the Chesapeake Bay, several smaller bays and estuaries, and Virginia's 115-mile Atlantic Coast have a total of more than 5,300 miles of shoreline. Collectively this represents one of the state's most important resources. It would seem that this abundance of water in the bay and its major tributaries would provide more than adequate area to meet recreational demand. However, only 1% of the shoreline is publicly owned and available for public use. While commercial marinas provide the bulk of boating access facilities, there are still not enough access points, including those in the public sector, to meet the increasing demand.

The 1992 *Water Access Inventory* identified existing public landings and private fee ramps that provide access to Virginia's water resources. Despite the addition of some access points since 1992, there continues to be a shortage of such facilities. This is identified as a continuing problem in the 2000 *Virginia Outdoors Survey*.

In June 2000, governors of the bay states signed the 2000 *Chesapeake Bay Agreement* to improve the quality of the bay and its tidal tributaries. One of the agreement's major initiatives is improving public access to the tidal waters of the Bay. This commitment calls for a 30% increase in enhanced or new access sites, including boat ramps to the waters of the bay region. This commitment will require substantial resources for the future improvement of water-dependent and water-enhanced recreational opportunities. An integral component of that initiative was the 2000 *Chesapeake Bay & Susquehanna River Public Access Guide*, which contains maps and matrices showing the location of public access sites along with the facilities available at each. This map was updated in 2006 and distributed widely throughout the Bay states. This will serve as the baseline from which progress is measured in meeting the increased or enhanced access commitment.

Inland water access

Virginia's large lakes provide a myriad of recreational opportunities, including power boating, sailing and water skiing. The 2000 *Virginia Outdoors Survey* measured more than 10.2 million annual activity days of demand for the combined fresh water activities. This represents a dramatic increase in use from that reported in the '92 survey. More than 1.1 million of those activity days are attributed to jet skis/personal watercraft (PWC) use, which was not measured in the previous survey. In Virginia, nearly 41% of all boats are registered within inland localities. By the end of 1999, there were 98,327 crafts registered in non-tidal localities – an increase of 7% since 1995. Counties closest to the large lakes have the greatest number of boats registered.

Based on information found in the 2000 *Virginia Outdoors Survey*, more than 55% of Virginians participate in some form of water-related outdoor recreation on the free flowing streams of the Commonwealth. The popularity of sports like canoeing, kayaking, tubing and rafting has increased greatly over the past decade. River running, in its various forms, has moved from a barely perceptible participation rate in 1972 to one of the 20 most popular outdoor recreational activities, generating more than 9 million activity days according to the 2000 *Virginia Outdoors Survey*. In addition, there is significant interest in paddle-in riverside camping and minimal impact camping opportunities.

Historically, a majority of the public's recreational access to rivers and streams has been informal, consisting primarily of road rights-of-way at bridge crossings and some access across private lands with owners' permission. In the past, these informal sites, in combination with facilities provided by the Virginia Department of Game and Inland Fisheries and other providers, were adequate to satisfy the demand. However, dramatic increases in use during the last few years coupled with the loss of a number of the key informal access sites has resulted in increased crowding and diminished use of certain key stream segments.

DGIF Boating Access Program

The DGIF boating access program traverses the Commonwealth providing access to all river systems, the Chesapeake Bay and the Atlantic Ocean. The program's success is due to the many partners across the state. DGIF owns, operates or cooperates on 219 facilities which include local jurisdiction cooperators contributing to over 90 facilities developed on local jurisdiction property and approximately 55 sites adjacent to bridge crossings and where roads terminate at waters edge in cooperation with the Virginia Department of Transportation. These partners also support the boating access program by contributing to the operations and maintenance at certain sites. The remaining sites are owned, constructed, operated and maintained by DGIF. The boating access program has sites located in 84 jurisdictions and on 106 water bodies; these facilities provide 419 launch lanes, 105 courtesy piers, 11 boat slides, 148 river access sites, 62 lake access sites, 7 Chesapeake Bay access sites, and 2 Atlantic Ocean access sites. The program has 31 saltwater sites and 188 freshwaters sites. There are over 248,000 active registered boats in Virginia and on many weekends the facilities are full with overflow parking along the entrance roads. See the DGIF website at www.dgif.virginia.gov/boating/access for boating access sites and information. The boating access program provides for non-power sites along the upland rivers and streams and facilities designed for power boats and saltwater or open water boating.

DGIF Boating Access Program works closely with a very important partner, the United States Fish and Wildlife Service. The United States Congress passed the Federal Aid in Sport Fish Restoration Act in 1950, or known as the Dingell-Johnson or D-J Program. This Act created the Sport Fish Restoration Program administered by the U.S. Fish and Wildlife Service. The objective of the program is: "To support activities designed to restore, conserve, manage, or enhance sport fish populations and the public use and benefits from these resources; and to support activities that provide boating access to public waters." Since the revenue to support this program is generated from a Federal tax on gasoline used to fuel motor boats, the funds from this program can only be used on boating facilities for motor boat access.

While direct participation is limited to fish and wildlife agencies, the general public ultimately benefits. States are reimbursed up to 75 percent of the total project cost. Since 1986, the Department of Game and Inland Fisheries has invested almost \$11 million of Sport Fish Restoration Funds in the development and maintenance of boating access facilities. These funds have been invested to develop 40 sites in over 35 Cities and Counties of which 26 sites provide access to freshwater and 14 sites provide access to saltwater. These 40 facilities provide 78 lanes to launch and retrieve boats and approximately 2000 spaces to park a vehicle with trailer. The Department has invested almost \$4 million dollars of program funds for the maintenance about 150 boating access sites each year.

DGIF has a prescribed process for evaluating and selecting boating access facilities. Some of the criteria used to evaluate sites are: sufficient land control and area to support the facility, water depth, environmental conditions, adjacent land use, terrain/topography, proximity to roads and other access sites, development and maintenance funding, and partners or cooperators. DGIF offers technical assistance to local governments and the general public of things to consider when building access facilities and boat ramps.

(www.dgif.virginia.gov/boating/bldg_boat_ramps.html.)

The public need for boating access to the waters of our State is growing and the Department is continuing to seek, evaluate and select sites to develop. Boating access users are hunters, bird watchers, and anglers, paddlers and power boaters, wildlife enthusiast, eco-tourists, conservationists, preservationists--they are every citizen of our great Commonwealth and many of the visitors from out of state.

Water trails or Blueways

Virginia is blessed with hundreds of miles of high quality recreational streams and rivers. Most of the streams that carry enough water to be useful during the prime recreational season are considered by law to be navigable. This designation makes them, for all intents and purposes, public thoroughfares. A significant limitation to the public's use of these waterways is access. Where the lands along these waterways are privately owned, access is only afforded by land with the permission of the landowner. To address the access need, public agencies have acquired land along some of these waterways for public access purposes.

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Many people consider any corridor of open water used for recreational travel or string of lakes connected by portage to be a water trail. Camping accessibility by water along the route makes multi-day travel possible. Canoeing, kayaking, and, in some areas, personal-watercraft use are all popular ways to enjoy water trails. –ROGER MOORE and THOMAS ROSS, Trails and Recreational Greenways: Corridors of Benefits, Parks & Recreation, January 1998

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Blueways Development

Mapping public access points along river corridors, lake shores and the Chesapeake Bay shore identifies opportunities for the establishment of water trails. Water trails are managed systems of access points and support facilities that allow trail users to plan multi-day trips with assurances that access points, camping sites, rest stops, and re-supply sites are clearly identified on maps and on signs visible from the water. Many canoe liveries and outfitters operating in Virginia rent canoes and kayaks and provide transportation to and from access points. Efforts are underway on several rivers, along the Bay shore, and along the seaside of the Eastern Shore to develop water trails. Maps have been published for the whole Potomac River and New River, and for portions of the South Fork Shenandoah, James, Pamunkey, Mattaponi, Rivanna, Bull Run-Occoquan, and the North Landing rivers. Water trail planning efforts are underway on many other rivers or river segments in the state.

[Insert a list of water trails and blueways maps available in Virginia]

There are two types of water trail maps. At the larger trip planning scale, blueways maps show a large geographic area and highlight the key points of interest a trip planner would need to know. At the more detailed level, blueways maps depict a river segment and show in detail particular aspects of that segment such as hazards, rapids, portages, and points of interest. The detailed maps are usually produced as strip maps with a whole set needed to cover the area usually covered by a trip planning map.

NEW RIVER CANOE TRAIL CASE STUDY

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The New River Canoe Trail was a joint project of the Virginia Department of Conservation and Recreation and the North Carolina Department of Natural Resources, the West Virginia Department of Natural Resources, the National Park Service, and the U. S. Army Corps of Engineers. The goal was to develop a user-friendly map of the New River from the point of navigation in North Carolina, to the Gaully River Bridge in West Virginia. The National Committee for the New River and the New River Community Partnership played major roles in collecting information and mapping of the corridor. The success of this project was due not only to the rewarding partnership between the government agencies, but also to the support of other governmental and private sector entities critical to providing support facilities and services to trail users. The process used in completing this successful project is outlined below.

- Blueway supporters developed the initial format and criteria for the water trail map.
- Meetings were conducted with local and regional governments and local interest groups to review the proposal and provide input.
- A Memorandum of Agreement was entered into by the agency partners that clearly established the intent of the trail and the roles of each agency.
- A practical format for the map was devised. Trails Illustrated agreed to produce and distribute the map. The map will identify all access and use areas in the corridor, important information on safety, accommodations, services, and cultural and natural sites of interest.
- The importance of good stewardship and Leave-No-Trace ethics is stressed on the map.
- To assist map users, important landmarks were noted and GPS coordinates listed for key sites along the trail.
- While not yet published, strip maps of the New River Canoe Trail by segment will be produced at a scale suitable for navigating the many challenging sections of the river.

Copies of the finished map can be purchased from DCR and the other partners as well as at most outdoor stores that sell Trails Illustrated maps. In addition, technical assistance in the development of water trails is also available. Contact DCR at (804) 786-5046.

The New River is also designated a Heritage River. This level of designation shows the interest in the resource from various levels.

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Many localities in Virginia have recognized that eco-tourism can be a major contributor to their local economy. To capitalize on their natural assets, such as their local river or lake frontage, they are considering blueway projects. The necessary components for a successful blueway are

public access points at suitable distances, adequate parking at those access areas, rest stops with sanitation facilities, canoe-in campsites, and sources of re-supply of water, food, and other supplies. Blueway planners need to be sensitive to the concerns of waterfront property owners to ensure that creation of the blueway does not cause users to trespass on private lands to picnic, camp, or for sanitation purposes. All of those needs have to be provided at appropriate intervals by the water trail proponent before producing maps or advertising the blueway.

While there have been many successful blueway mapping projects completed in Virginia, there are many others that could be produced if adequate facilities existed to support the effort. Despite the continuing efforts of DGIF, DCR, local governments and the private sector, there remains a shortage of access points to many good sections of streams. Many of the access points identified in canoeing guides are on private property or at bridge crossings with no authorized access or parking. These “informal” accesses need to be acquired for permanent public use and proper parking, bank stabilization, and signage needs to be installed. Likewise, the blueway rest stops and camping areas need to be acquired and developed.

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Captain John Smith’s Trail: John Smith’s Adventures on the James River Water Trail and Auto Tour

www.JohnSmithTrail.org

Captain John Smith’s Trail on the James River was created by the Virginia Department of Conservation and Recreation with the assistance of Virginia Tourism Corporation and funding from Jamestown 2007. This water trail incorporates 40-site boating and auto-tour routes in the Oxbow Loop, the Cypress Loop and the Oyster Loop.

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DGIF is analyzing the need for improved access and will solicit the input of the resource agencies and blueway supporters in the development of a State Boating Access Master Plan. An enhanced source for funding acquisition and development of these areas is needed, as is a strong partnership between users, resource agencies, outfitters and local governments to operate, maintain and manage these water trails and the supporting land-based use areas.

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Water trail guiding principles

The North American Water Trails Association (NAWT) is a coalition of organizations and individuals committed to opening recreational access to North America’s wealth of waters. NAWT has developed a set of guiding principals for establishing effective water trails, which are outlined below.

- 1) **Partnerships: cooperating and sharing.** A water trail is the product of partnerships among an array of governmental and non-governmental entities. With volunteers as the key supporters and advocates of the trail, partnerships are developed among government land managing agencies, private property owners, government regulatory agencies, user groups, and local businesses. Together, these groups can create and maintain a successful water trail with broad-based and long-term support.

- 2) **Stewardship: “Leave No Trace”.** Water trails promote minimum-impact practices that ensure a sustainable future for the waterways and adjacent lands. Water trails embrace the Leave No Trace Code of Outdoor Ethics that promotes the responsible use and enjoyment of the outdoors. A trail user who is educated to respect the quality of water, land, vegetation and wildlife habitat affected is a good caretaker. When users learn protection and restoration on the trail, they may be inclined to do likewise on the earth.
- 3) **Volunteerism: experiencing the joy of involvement.** Most water trails are created, promoted, and maintained through the energy and dedication of local citizens, working individually and through "friends" organizations. Community involvement and volunteerism are the keys to developing a sense of trail stewardship, promoting the trail within the community, encouraging respect for the trail's natural and cultural heritage and ensuring that local governments support the trail's existence. Through love of place and of good times volunteers bring hard work and celebration to the water trail community.
- 4) **Education: learning by experience.** Through comprehensive trail guides, signage, public outreach and informative classes, water trail organizations encourage awareness of the natural, cultural, and historical attributes of the trail. Serving as outdoor classrooms, water trails teach through seeing, listening, touching and experiencing.
- 5) **Conservation: protecting our natural heritage.** Water trail activities support the conservation of the aquatic ecosystem and contiguous lands. Trail builders and activists are a respected constituency advocating for resource protection and participating in resource restoration. The water trail community is a watchdog for prevention of environmentally harmful acts, striving to sustain the natural integrity of the trail and preserving the quality of the trail experience.
- 6) **Community vitality: connecting people and places.** A water trail is a network of recreational and educational opportunities. Hiking trails, bikeways, greenways, museums, historic sites, parks and preserves are connected by water trails creating frontiers for exploration, discovery and enrichment. These connections build a sense of place and bind citizens in a love for their community. Water trails link families who grow together through work and play on the trail.
- 7) **Diversity: providing opportunities for all .** Water trails are non-exclusive: They benefit the able-bodied and the disabled, the young and the old, the disadvantaged and the advantaged. Water trails welcome all those who want to respectfully enjoy and appreciate the trail experience. Through shared work and play, tolerance and understanding are fostered. Broad-based participation in trail activities is achieved through affirmative outreach and recruitment.
- 8) **Wellness and well-being: caring for self and others.** Water trails are wholesome; fresh air and exercise bring fitness and health to trail users. While actively promoting these benefits, water trail users need reliable and accurate safety information, and training to responsibly enjoy and appreciate water trails. Safe use requires a commitment to safe design and sound management. Awareness, education and skills training in health and safety promote the wellness and well-being of all water trail users.

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Public Fishing Piers

Fishing is ranked 7th in the 2006 Virginia Outdoors Survey. Freshwater fishing is ranked slightly higher than saltwater fishing because of the proximity of coastal fishing areas to the population. The Department of Game and Inland Fisheries provides fishing piers or platforms at many lakes and tidal waters of the state. Fishing piers allow fisherman access to deeper waters than bank fishing usually provides, thereby enhancing fisherman success rates. Fishing piers are available at 41 sites and ten of these provide special accommodations for disabled fishermen. To view the list of DGIF managed fishing piers go to: www.dgif.virginia.gov/fishing/where_to_fish/.

Likewise, several Virginia State Parks offer fishing piers. State parks along the tidal rivers offer some of the more significant fishing piers. A recent public-private partnership with Smurfit-Stone Container Corporation resulted in the construction of a large fishing pier at York River State Park. The old ferry landing pier at Kiptopeke State Park has been totally rebuilt into a popular fishing pier on the eastern shore of the Chesapeake Bay.

Lake Harrison owned and operated by the USFWS and a few national parks also provide bank or pier fishing. Most importantly, local parks throughout the state and the private sector provide a considerable fishing access to local communities. Piers constructed by private developments on small lakes and ponds designed for storm water management often provide close to home recreational fishing. Commercial fishing piers along the coast are popular recreation destinations that provide salt water fishing opportunities.

Resource agencies for Water Access:**Virginia Department of Conservation and Recreation
Division of Planning and Recreation Resources**

203 Governor Street, Suite 326

Richmond, Virginia 23219

www.dcr.state.va.us

Or

Virginia Department of Game and Inland Fisheries

4010 West Broad Street

Richmond, Virginia 23230

www.dgif.state.va.us

Chapter VII - D. Scenic Resources

“Identification and protection of [scenic] assets is an important component of smart growth and scenic stewardship.” (www.byways.org, 2006)

The Commonwealth of Virginia has abundant and diverse visual and scenic resources that entice visitors and have a lasting appeal for residents. From the majestic mountains and tranquil valleys to the foothills of the Shenandoah to the Atlantic’s coastal white beaches and sand dunes Virginia is a cornucopia of varied experiences. Many vistas lure people to explore and visit cultural and historic sites rich in architecture. Quaint towns and rolling landscapes reminiscent of days past add to scenic value and experience sought by Virginia’s tourists. Virginia’s scenic rivers program recognizes exemplary beauty of designated rivers that bisect mountain ranges, farms, woodlands and tidal marshes throughout the state. The world-renowned Chesapeake Bay offers views of working water vessels and watermen, small coastal communities and vast tidal marshes and lowland swamps. Virginia’s natural resource richness certainly is reflected in scenic character where the built environment is designed in harmony with the intrinsic qualities of nature.

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Benefits of Scenic Quality

Recreation Benefits

- Having attractive places to visit are critical for citizens and tourists leisure time; as shown in the 2006 *Virginia Outdoors Survey*.
- Scenic views and scenery are used to rate car, hiking and other tour routes, by local, state and national entities to attract tourism to an area due to its scenic resources, since people pay to experience scenic landscapes.

Economic Benefits

- Virginia provides tax benefits to the private sector for preserving and managing lands with scenic and natural values through a law (sections 58.1-3229-through 58.1-3244 of the Code of Virginia), which permits localities to adopt a program of special assessments.
- Farmland is considered scenic and contributes positively to the state’s economy.
- Localities that protect scenic resources are sought after by residents and attract new residents (examples in - Albemarle, Loudon, and Clarke Counties).
- State Park Economic Impact Statements indicate property values increase by 10 percent within a quarter of a mile of a major open space resource like a state park.
- There are economic values attached to trees and tree-covered areas. These are important and should be considered above the timber value when appraisals are done. The International Society of Arboriculture [<http://www.isa-arbor.com/home.aspx>] has developed a process for calculating the landscape values of trees.
- Redevelopment projects may incorporate restoration open space and reclaim the visual integrity of previously disturbed sites.

Psychological Benefits

- Landscapes form a sense of place and provide a common point of reference over time for many generations.
- Visually attractive work and living environments have a positive effect on the work habits and attitude of workers contributing to the success of businesses and organizations.

- Scenic views have a beneficial impact pm to patients receiving treatment or recovering from medical procedures.

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Findings

- 3 of the top 10 reasons for visiting or touring Virginia relate to visual resources; #2 Visiting historic places 56%, #3 driving for pleasure 55%, and visiting natural areas, preserves and refuges 44%.
- As the rate of development increases, visual resources diminishes.
- The Appalachian Trail Conservancy (ATC) has changed its focus from one of acquisition to one of corridor and viewshed protection.
- Repeated studies show no decreases, and often an increase, in property values along greenways, parks and natural areas because of scenic values associated with these properties.
- Air pollution is having a major impact on some natural areas, their resources, scenic views and park visitation numbers.
- Studies on highway hypnosis show that wildflower beds, or other large areas of color, break up the view allowing travelers to be more alert.

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Recommendations

- Each locality should conduct a visual resources assessment as part of their green infrastructure inventory and mapping process. Consider using universities and other institutions to help supplement and support this effort.
- Universities with landscape architecture and planning programs should incorporate visual assessment techniques in their curriculum requirements.
- Localities should ensure that a component of their comprehensive plan provides for the protection and enhancement of scenic resources, visual character and viewsheds.
- Localities should develop corridor management plans for scenic byways, blueways, and greenways to assure preservation of the scenic quality of the corridor.
- DCR, along with other organizations, should prepare a brochure that enumerates the benefits of scenic environments and how stewardship of scenic resources is a basic tenant of smart growth.
- DCR should co-sponsor, along with other agencies, universities, and organizations a workshop on scenic/ aesthetic resources and the tools and techniques available to evaluate, map, quantify and manage resources.
- Grant administrators should give extra consideration for funding of projects that protect or enhance scenic resources. .
- DCR will continue to comment on highway projects, including all state and federally funded bridge projects. If DCR knows that a locality wants an alternative bridge design at a particular location, they will include that request in the comments that are provided to VDOT.

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Legislative references to scenic resources

It has been established, through the court system, that states and localities can protect scenic resources by upholding local landmark protection laws. In Virginia scenic resources are recognized by the mention of the word ‘scenic’ in over 160 sections of the *Code of Virginia*. The *Code of Virginia*, §10.1-108 defines environment as “the natural, scenic, scientific and historic attributes of the commonwealth.” The effect of planning, transportation, mining, signage, advertising and management of the environment, including its scenic values are also referenced in the *Code of Virginia*. The establishment of boards and committees to protect scenic resources and the creation of a tax benefit for properties that protect scenic resources (see box on the Special Use Tax) are outlined in legislation. Other statutes uphold local scenic protection laws and recognize the value of scenic resources through specially designed license plates.

[\[Box on Special Use Tax\]](#)

A tool for the protection of Scenic and Open Space Resources:

“Standards for Classification of Real Estate” under the Virginia Land Use Assessment Law, which requires consistency with the land use plan. The regulation identifies the following five major open space categories (Special Use Tax provisions of the *Code of Virginia, Article 4 of Chapter 32, Title 58.1*):

Park and recreation use lands: Public, semi-public or privately owned parks, playgrounds or similar recreational areas operated for public or community use.

Conservation or other natural resource lands: Lands protected for the preservation of forest and wildlife resources, watersheds, nature preserves, arboretums, marshes, wetlands and similar natural areas.

Floodways: Lands subject to periodic or occasional flooding that accommodate the passage or containment of floodwaters. . These may include areas adjacent to floodplains reserved as additional channels for future floods.

Historic or scenic areas: Properties on the Virginia Landmarks Register or the National Register of Historic Places as well as properties protected by scenic or open space easements and sites designated or recommended as scenic by the Departments of Conservation and Recreation, Historic Resources, Transportation or other state or local agency.

Character landscapes: Lands determined to be of value in shaping the character of the region or the direction and timing of community development.

[\[End Box\]](#)

Importance of scenic resources

Scenic resources are important to both the quality of life and the economy. The 2000 President’s Commission found that Americans primarily choose a place to visit based on “natural beauty”. The most recent Virginia Outdoors Survey supports this by reporting that 56% of Virginians travel to historical areas, 44% visit natural areas and 22% visit gardens and arboretums. The challenge is to maintain scenic quality, preserve landscape vistas and viewsheds at historically and culturally significant sites and throughout Virginia’s communities to strengthen visual identity and character, support economic viability and create a better quality of life.

Much of the scenery in Virginia is associated with landscapes of agrarian activities and forestry. Changing trends in rural areas have opened opportunities for improved economies through tourism, new businesses, industry, and commercial development. Protection of scenic resources

in rural and suburbanizing regions of the Commonwealth is particularly important to ensure the continued viability of tourism, recreation and eco-tourism industries.

Throughout rural, suburban and urban areas, protection of scenic resources is integral in maintaining and creating a sense of community. Visual resources become icons for communities creating a sense of place and identity. Aesthetically designed communities that integrate natural landscape features into recreation destinations and enhance scenic character improve real estate values, create destination recreation as well as tourism opportunities and make communities more attractive for re-development and new development.

Development and Scenic Resources

A visually pleasing community is critical to community development goals and is linked with environmentally sound economic viability and quality of life. Throughout the Commonwealth, scenic resources are at risk from sprawling development and related gray infrastructure expansion of roads, utilities, windmills, cell towers, billboards, and light pollution. As urbanization migrates from the urban core, farmland and forests are converted to subdivisions, commercial and other developments. Conserving the scenic character while transitioning from urban to rural landscape scenery is important for visual integrity and a community's quality of life.

Development and redevelopment of communities provide an opportunity to conserve visually sensitive areas and create new developments in harmony with existing landscapes. Design of new development and redevelopment should be appropriately scaled to fit the surrounding landscape and allow for healthy lifestyles while enhancing streetscape aesthetics. Investments that improve the appearance of traditional commercial areas, especially landscaping, attract new businesses, stimulate economic development, and increase property values.

Local action needed for scenic resources

Localities need to positively influence scenic quality through local land use controls and by identifying and protecting scenic resources. Each locality has available a set of land use and conservation tools to improve and maintain scenic resources and open space. At the local level, it is important to identify visual character, viewsheds and scenic resources for protection. Comprehensive plans, technical resource studies, and local ordinances are effective mechanisms for protecting and enhancing the visual environment. Often conservation tools and strategies may also be implemented to maintain the scenic integrity of the landscape and community. These tools and resources can be applied to protect scenic assets and prevent the cumulative impact of development on the scenic resources thereby preserving community economics and quality of life.

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Scenic Resource Planning Tools

- Comprehensive plans
- Open space plans
- Parks and recreation plans
- Visual/ scenic resources inventories and assessments

- Natural and cultural resource inventories
- Environmental inventories
- Greenways plans and studies

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Methods are available for conducting visual assessments of roadways, rivers, resorts, mining, forestry, historic areas and communities in order to quantifiably determine the quality of the scenic resources and how major public works and larger-scale developments and policies will affect the scenic, natural and cultural landscape. There are various methods to systematically identify, inventory, evaluate, and prioritize visual and scenic qualities in the environment. Landscape architects and design professionals can help formulate strategies to protect views to and from a resource and the overall appearance of scenic sites and corridors.

Scenic resource management/ conservation tools

Some of the tools that are available to local planners help maintain or improve visual quality within communities include:

- Site planning
- Requisite setbacks
- Buffers for designated areas
- Parking requirements
- Screening requirements for designated areas
- Landscaping requirements
- Facade and architectural guidelines
- Urban forestry or streetscape initiatives
- Signage regulations
- Transportation access control
- Stormwater runoff control guidelines
- Erosion and sediment control regulations
- Landscape maintenance requirements
- Ridge-top preservation ordinances
- Conservation easement

Other initiatives that enhance community driven scenic protection include:

- Supporting an aggressive anti-litter campaign to eliminate trash and illegal signs,
- Proposing underground utilities to reduce the cost of sidewalk widening,
- Proposing tree plantings and tree maintenance,
- Encouraging placement of development away from visually sensitive sites, and
- Redeveloping unattractive sites using standards to create visual appeal and scenic quality.

Federal efforts supporting scenic resources in Virginia

Scenic views from and toward several federal parks and national forests within Virginia are being impacted by land use changes and air pollution in the viewshed. The National Park Service is monitoring and working with local governments to manage impacts that affect the views from the Skyline Drive, Appalachian Trail, and Blue Ridge Parkway.

[Subheading of Federal efforts]Appalachian Trail and Skyline Drive

A National Park Service (NPS) reports that along Skyline Drive and the Appalachian Trail visibility has shrunk to as little as one mile on smoggy summer days. The natural range of visibility in Virginia's mountains used to be 115 miles, but now the average visibility is approximately 15 miles. Pollutants are carried by wind currents to the park from the locations inside and outside of the state. Acid rain and ozone impacts on vegetation, as reported by NPS, are also affecting vegetation and habitat health in the area. Some plants are showing effects that range from visible injury on leaves, premature leaf loss, reduced photosynthesis, and to reduced

growth. While these effects have occurred gradually over time, they indicate a threat to forest resources and may hamper enjoyment of these park resources for future generations.

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Resource:

- http://www.rappflow.org/press/press_air-water-snp.html; Information on the air quality in Shenandoah National Park.

[End Box]

[Subheading of Federal efforts]**Blue Ridge Parkway (BRP)**

Intensive residential development along the Blue Ridge Parkway detracts from the scenic character of the parkway experience, especially in the Roanoke area. As more and more people move to scenic areas near the parkway, the challenge to protect those values and resources increases. Landscape architects have held a key role in integrating and managing scenic resources while protecting and providing recreational assets along the Blue Ridge Parkway.

[Subheading of Federal efforts]**National Forests**

[Text coming soon]

Protecting Scenic Resources Throughout the Commonwealth

Visual resources protection is recognized as an essential component in the conservation of natural resources. Conservation lands are sometimes established to maintain the visual integrity surrounding important habitats and special communities. In addition, green infrastructure planning methodology and greenway development may help to preserve scenic value within communities.

The Virginia Byways and Scenic Rivers programs systematically evaluate and recognize visual resources. Corridor management plans are needed to assure preservation of the scenic qualities along these resources and within communities. Visual assessments conducted on a county or regional level, whether for road corridor plans, environmental review or historic landscapes, help establish a baseline for scenic integrity and may lead to visual management plans for communities. Viewshed studies and scenic data are needed to develop geographic information that may assist in modeling potential opportunities for conservation and enhancement of scenic resources.

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“Scenic areas endow communities with substantial benefits, such as higher property values and increased tourism revenue. Protecting scenic vistas and viewsheds from the effects of haphazard development allows a community to preserve its unique charm, build civic pride, and attract positive growth to the area.” (www.scenic.org, 2006)

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Planning for new roadways should include an assessment of the corridor scenic environment by evaluating both the impacts of the proposed roadway as well as views from the roadway. Bridges are important design elements for creating visually interesting highways. Water is another aesthetic resource that can greatly enhance a highway's attractiveness. Older bridge designs generally allowed a water view and a unique architectural or engineering component to enhance structural appeal. New bridges should be designed to offer a safe, open parapet allowing vehicles and pedestrians a view of the open water and its surrounding landscape. Communities

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should stress in their transportation planning efforts with VDOT a strong desire for visual and pedestrian access at all river crossings. New and replacement bridges should provide recreational access to appropriate water bodies.

An assessment process is important in identifying scenic resources, both to and from the visual resources. Visual assessments help ensure the appropriate placement of new development while conserving existing scenic resources. Visual assessments are used to develop strategies for conservation and protection of resources as well as determine ongoing management techniques for long-term sustainability of resources.

[Begin box]

- US Dept. of Agriculture, Forest Service, Scenic Byways: A Design Guide for Roadside Improvements, 2002.

[End Box]

Communities and citizens often need to become more aware of the importance of protecting scenic resources, both legislatively and voluntarily. Illustrating the economic development opportunities and benefits available to communities that undertake efforts to improve their appearance will encourage citizens to protect and enhance their communities. Through green infrastructure planning each community should identify and protect its scenic resources. Local communities working in concert with conservation and scenic interest organizations help retain the important scenic quality of the Commonwealth for years to come.

DCR will continue to comment on highway projects, including all state and federally funded bridge projects. If DCR knows that a locality wants an alternative bridge design at a particular location, they will include that request in the comments that are provided to VDOT.

For the most part, protecting visual resources is not regulated by local land-use ordinances, developmental and architectural guidelines, or state legislation. Local citizens and communities are responsible for identifying those visual resources that they consider important to their quality of life. Local measures are important in planning for and implementing strategies to protect scenic character in communities across Virginia.

[Box begin]

Resources

- www.byways.org, www.scenic.org, 2006
- US Dept. of Agriculture, Forest Service, Scenic Byways: A Design Guide for Roadside Improvements, 2002.
- US Dept. of Transportation, Federal Highways Administration. Visual Prioritization Process – User’s Manual. July 1994.
- Scenic America. O, Say, Can You See: A Visual Awareness Tool Kit for Communities. Washington, DC, 1996.
- Scenic America. Scenic Beauty Benefits Business: Basic Design Guidelines for Business and Historic Districts, Washington, DC.

[End Box]

Chapter IV-E. Scenic Highways and Virginia Byways

“Roads are designated as scenic byways because of their unique, intrinsic qualities. ...[to] invite the public to visit, experience, and appreciate...” (Yamada, et al, p iii)

Driving for pleasure has long been recognized as one of Virginia’s most popular outdoor recreation pursuits. Virginians rank traveling scenic roads as a frequent outdoor activity. In fact, the 2006 Virginia Outdoors Survey ranks driving for pleasure as the second most popular outdoor recreation activity with 54% of the respondents participating. The results of this survey combined with past surveys indicate that driving for pleasure has been ranked as one of the top five outdoor recreation activities for the past 20 years. The appeal of scenic roads is the intrinsic quality of Virginia’s diverse landscapes and the ease of connecting with nature from the automobile. Traveling scenic byways provides an opportunity to have a relaxing, comfortable outdoor experience that nourishes the need for a connection with nature. There are both national and state sponsored scenic roads programs. The Virginia Byways program in Virginia recognizes natural, cultural, historical, recreational and archeological amenities of the Commonwealth’s scenic roads. The unique and varied culture and character of the geographic regions of the Commonwealth are represented by designated Virginia Byways.

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Scenic Highway and Virginia Byway Benefits

Scenic byways add economic benefits to the community. For example, the Blue Ridge Parkway, one of the state’s three All-America Roads, adds more than \$945 million annually to Virginia’s economy. Other benefits of the Virginia Byway program include:

- Promotes adjacent communities and the scenic byway corridor by including designated road segments on the state map for *Scenic Roads of Virginia* as well as information included on the Virginia Byways web site
- Creates an awareness of the unique qualities surrounding scenic byways.
- Recognizes the beauty of unique places and may offer special funding opportunities for scenic roads projects with clear planning objectives.
- Provides additional economic opportunities, including being part of the coordinated promotional strategy for Virginia tourism.
- Affords localities the opportunity to participate in the National Scenic Byway Program.
- Insures environmental review consideration for all federal and state funded projects.
- Restricts placement of outdoor signage along Byways corridors.

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Findings

- The 2006 *Virginia Outdoors Survey* listed driving for pleasure as the third most popular outdoor recreation activity with 56% of Virginians participating.
- The 2006 Virginia Outdoors Survey also identified visiting historic sites and visiting natural areas as important outdoor recreational pursuits.
- Scenic roads are key community assets and communities are often interested in designation

and promotion of these scenic resources.

- Increased development threatens the integrity of Virginia Byway corridors.
- VDOT is working with VTC and others to develop a scenic byways website to promote the program attractions and connect communities.
- For the first time in Virginia's history, four roads were designated as National Scenic Byways: Blue Ridge Parkway (BRP), George Washington Memorial Parkway (GW), Skyline Drive, and Colonial Parkway.
- For the first time in Virginia history, three roads were designated as All American Roads: Blue Ridge Parkway (BRP), George Washington Parkway (GW), and Colonial Parkway.

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Recommendations

- Local jurisdictions should recognize and nominate scenic roads for designation as Virginia Byways.
- Update Virginia Scenic Byway designation procedures and program in cooperation with Scenic Virginia, VDOT and others. Consider adding a historic or heritage category to program.
- DCR should incorporate Scenic resources data in the green infrastructure land planning database.
- DCR in partnership with VDOT and other agencies should hold a workshop on scenic/aesthetics issues and develop a Scenic Byways Management Manual for localities.
- DCR and VDOT should assist local governments with the development of land-use planning tools (i.e., overlay zones) along scenic highways and Virginia Byways to protect the attractive character of the scenic byways.
- Partner with other state, local and professional organizations to determine implementation strategies to protect the scenic assets of byway corridors.
- VTC & VDOT should continue to identify and employ funding opportunities for scenic byways promotion, corridor management plans, safety, maintenance and placement of visitor aids.
- VDOT should establish a dedicated source of funding from transportation funds to maintain the scenic character of designated Scenic Byways. (Lynn can this be done?)
- The Commonwealth should establish a dedicated source of funds to maintain the integrity of Scenic Byways without the expense of other transportation programs.
- VDOT and the Commonwealth Transportation Board should implement the recommendations of the 1995 report to the General Assembly on "Road Design Standards in Scenic and Historic Areas."
- DCR should continue to review and comment on permit applications in a way to respect and protect scenic roads and rivers, especially for bridges and major primary and interstate road crossings and improvements.
- DCR should partner with VTC, VDOT and others to promote and manage thematic driving trails.

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"Adventure beckons on the roads and highways designated as Virginia Byways. More than mere pavement between points A and B, a Virginia Byway offers travelers a side of the Commonwealth that is uncommon and enlightening. Each byway leads to scenes of natural beauty and places of historical and social significance." (VDOT website, Virginia's Scenic Byways)

The Virginia Byways recognition program began in 1966, when the Virginia General Assembly passed the Scenic Highways and Virginia Byways Act (Code of Virginia §33.1-62). The Act authorizes the Commonwealth Transportation Board (CTB) to recognize roads for their outstanding features. Two legislated definitions apply to Virginia scenic roads designations. Scenic Highway is a road designed and built within a protected corridor. While some roads in Virginia may qualify as Scenic Highways, the more common designation is Virginia Byways. Virginia Byways are existing roads with significant aesthetic and cultural values that connect areas of historical, natural, or recreational significance.

The Scenic Highways and Virginia Byways Act requires the Virginia Department of Conservation and Recreation (DCR) along with the Virginia Department of Transportation (VDOT) to determine roads eligible for designation. Existing and potential Virginia Byways are shown on the map on page _____. As of spring 2006, over 2,780 miles of roads have been designated Virginia Byways. In addition, four National Scenic Byways, totaling about 369 miles and the three USFS byways totaling about 96 miles have also been recognized in Virginia.

History of Virginia Byways

While the Scenic Highways and Virginia Byways Act was passed by the General Assembly in 1966, the first Virginia Byway was not designated until 1974. This designation occurred after the Virginia Department of Transportation (VDOT) surveyed the more than 52,000 highway miles throughout the Commonwealth to identify potential byways. The initial list of Virginia Byways recommended more than 1,600 road miles for designation. Of that original 1,600 road miles all but 450 miles have been designated and are included in the total 2,782 miles included in the Virginia Byways system. Recommendations for Virginia Byway designation are based on visual qualities, historic interest and/or recreational opportunities. Potential Virginia Byway designations are revised every five years and included in the *Virginia Outdoors Plan*.

While many roads from the initial list of Virginia Byways have been designated, efforts are needed to geographically balance the distribution of Virginia Byways across the Commonwealth. Statewide interest in celebrating Jamestown 2007 has promoted a flurry of applications for Virginia Byway designation. Since June of 2005, over 700 miles of roads have been studied resulting in an additional 460 miles being recommended for Virginia Byway designation. Among the most notable designations are the four national parkways recognized in 2006 as National Scenic Byways. Three of these parkways were also designated All American Roads.

Process for Designation of Virginia Byways

Scenic quality is defined by the contribution of resources to the overall visual quality of the landscape. Elements of the landscape including landform, water, vegetation, community design and gray infrastructure influence scenic quality. Intrinsic qualities along Virginia Byways include cultural, historical and recreational features along the road corridor creating significant scenic views without interruption from detracting features. A byway's features must be representative of the intrinsic qualities, unique, irreplaceable, or distinctly characteristic of the area. A byway most often represents an exceptional example of a common regional landscape.

All Virginia Byways should share three characteristics of scenic quality:

- Frequency - Scenic features and views should be frequent enough to give a sense of continuity to the drive along the byway.
- Consistency – Along the road corridor, scenic features should consistently relate to each other as well as to cultural, historical and recreational attributes. A scenic road's relationship to the surrounding environment is important to the sense of cohesiveness and quality of the visual experience.
- Variety - A variety of viewing opportunities enhance the experience of a byway, including seasonal changes.

The process of designating a road a Virginia Byway is initiated at the local level and generally follows the procedure outlined below.

1. A request for study is submitted by the locality to DCR or VDOT.
2. Land use, zoning information and historical documentation along the road corridor is submitted by the locality.
3. VDOT and DCR review traffic volumes and accident reports along the road corridor.
4. A field study is conducted by DCR and VDOT.
5. Field study results and preliminary recommendations are shared with the locality.
6. The locality holds a public hearing to receive input to supporting a local resolution for the Virginia Byway designation.
7. DCR and VDOT forward the recommendation and local resolution to the Commonwealth Transportation Board (CTB)
8. The Commonwealth Transportation Board (CTB) approves the designation.
9. VDOT erects Virginia Byway signage along the corridor and add the road segment to informational materials.

Re-evaluation of Virginia Byways

Since Virginia Byways is a recognition program, designation is only the first step in protecting the Virginia Byway corridors. Over time, land uses and scenic road corridors may change. These changes cause concern about the continued eligibility of Virginia Byways to meet designation criteria. To assist with long-term tracking of the condition and scenic quality of Virginia Byways, VDOT district offices are responsible for conducting annual evaluations of all designated Virginia Byways. In conjunction with VDOT, a cooperative initiative aimed at maintaining the integrity of the Virginia Byway program should be implemented throughout the Virginia Byways system to involve local governments, Planning District Commissions (PDC), Virginia Tourism Corporation (VTC) and DCR. This cooperative initiative would establish scenic corridor baselines for Virginia Byways defining values and resources that determine the acceptance or denial for Virginia Byway designation. Local and regional land use and transportation plans would be referenced as part of the evaluation. This data and evaluation is key to maintaining the consistency of the program. Initial assessments could use car-mounted video cameras to document scenic and land use conditions. Follow-up recordings could be done every 3-5 years to provide comparative data as well as clearly articulate the unique characteristics of the corridor. Based on the baseline assessment and evaluations, recommendations for future additions or removals from the Virginia Byways system would be made and planning tools implemented for corridor protection.

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Information about the Virginia Byways program and a statewide map may be referenced on the Virginia Byways website (<http://www.virginiadot.org/infoservice/faq-byways.asp>).

A Virginia map for touring Virginia's Byways may be ordered at (<http://www.virginiadot.org/infoservice/maporder.asp>).

Federal Highway Administration National Scenic Byways Program in Virginia - <http://www.byways.org/browse/states/VA>
[\[End Box\]](#)

Other Scenic Roads

In addition to the Virginia Byways, there are other road designation programs including the National Park Service Parkways, the FHWA National Scenic Byways and All American Roads Program, US Forest Service byways, and the American Automobile Association program. See comparative chart.

National Park Service Parkways

National Park Service (NPS) Parkways are managed as scenic routes, emphasizing scenic values, recreational features, wildlife viewing, cultural, and historical features with scenic overlooks, waysides and interpretive sites. NPS works with adjacent property owners, and localities to preserve and protect the views, vistas and environment along its roads.

The National Scenic Byways Program (<http://www.byways.org/learn/>) is part of the U.S. Department of Transportation, Federal Highway Administration. The program is a grass-roots collaborative effort established in 1991 to help recognize, preserve and enhance selected roads throughout the United States. The U.S. Secretary of Transportation recognizes certain roads as All-American Roads or National Scenic Byways based on one or more archeological, cultural, historic, natural, recreational and scenic qualities. Both designations involve lengthy processes and require corridor management plans.

National Scenic Byways include the Skyline Drive, Blue Ridge Parkway, George Washington Memorial Parkway and Colonial Parkway received this designation in 2005.

All-American Roads designated in Virginia in 2005 include the Blue Ridge Parkway, Colonial Parkway and George Washington Parkway.

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National Scenic Byways and All-American Road Intrinsic Qualities
To be designated a National Scenic Byway, a road must possess characteristics of regional significance within at least one of the following intrinsic qualities. All-American Roads must possess characteristics of national significance in at least two of the following intrinsic qualities.
Archaeological Archaeological Quality involves those characteristics of the scenic byways corridor that are physical evidence of historic or prehistoric human life or activity that are visible and capable of being inventoried and interpreted. The scenic byway corridor's archeological interest, as

identified through ruins, artifacts, structural remains, and other physical evidence have scientific significance that educate the viewer and stir an appreciation for the past.

Cultural

Cultural Quality is evidence and expressions of the customs or traditions of a distinct group of people. Cultural features including, but not limited to, crafts, music, dance, rituals, festivals, speech, food, special events, vernacular architecture, etc., are currently practiced. The cultural qualities of the corridor could highlight one or more significant communities and/or ethnic traditions.

Historic

Historic Quality encompasses legacies of the past that are distinctly associated with physical elements of the landscape, whether natural or manmade, that are of such historic significance that they educate the viewer and stir an appreciation for the past. The historic elements reflect the actions of people and may include buildings, settlement patterns, and other examples of human activity. Historic features can be inventoried, mapped, and interpreted. They possess integrity of location, design, setting, material, workmanship, feeling, and association.

Natural

Natural Quality applies to those features in the visual environment that are in a relatively undisturbed state. These features predate the arrival of human populations and may include geological formations, fossils, landform, water bodies, vegetation, and wildlife. There may be evidence of human activity, but the natural features reveal minimal disturbances.

Recreational

Recreational Quality involves outdoor recreational activities directly association with and dependent upon the natural and cultural elements of the corridor's landscape. The recreational activities provide opportunities for active and passive recreational experiences. They include, but are not limited to, downhill skiing, rafting, boating, fishing, and hiking. Driving the road itself may qualify as a pleasurable recreational experience. The recreational activities may be seasonal, but the quality and importance of the recreational activities as seasonal operations must be well recognized.

Scenic

Scenic Quality is the heightened visual experience derived from the view of natural and manmade elements of the visual environment of the scenic byway corridor. The characteristics of the landscape are strikingly distinct and offer a pleasing and most memorable visual experience. All elements of the landscape -- landform, water, vegetation, and manmade development -- contribute to the quality of the corridor's visual environment. Everything present is in harmony and shares in the intrinsic qualities.

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A new and exciting cooperative project is exemplified in the **Journey Through Hallowed Ground** effort, which was created through a partnership between the National Park Service's National Register of Historic Places, Scenic America, the Virginia Department of Historic Resources, the National Conference of State Historic Preservation Officers (NCSHPO), and the National Alliance of Preservation Commissions (NAPC). As part of the Department of the

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Interior's strategy to revitalize communities by promoting public awareness of history and encouraging tourists to visit historic places throughout the nation, the National Register of Historic Places is cooperating with communities, regions and Heritage Areas throughout the United States to create online travel itineraries. The Journey Through Hallowed Ground covers the corridor along Route 15 from Pennsylvania south to Charlottesville. This effort is looking for state byway designation before going for national designation. A parallel effort is the Virginia Byway designation of the Valley Turnpike along the Route 11 corridor from Winchester south to Roanoke. In addition, the Wilderness Trial following Route 11 from Tennessee north to Pennsylvania is also seeking Virginia Byway designation.

The **National Forest Service (USFS)** began designating significant roads within forest boundaries in 1988. These roads are notably scenic and provide opportunities to experience nature first hand in the national forests. Three USFS byways, Big Walker, Mount Rogers and the Blue Ridge Parkway traversing a portion of the USFS land in Virginia, are also designated as Virginia Byways. The Highlands Scenic Byway is another USFS scenic road designation, but it is unpaved and does not qualify for designation under the Virginia Program.

[Begin box]

USFS Byways in Virginia

Big Walker Mountain Scenic Byway



An alternative to six miles of Interstate 77 and the Big Walker Interstate tunnel, the Big Walker Mountain Scenic Byway traverses 16.2 miles of State Highway 717 and US 52/21 in the Jefferson National Forest.

Highlands Scenic Byway



This National Forest Scenic Byway weaves through a landscape of diverse vegetation, scenic views, unique geological formations and an abundance of wildlife. In addition, there are numerous historic places-the remnants of a once thriving mining community.

Mount Rogers Scenic Byway



The Mt. Rogers Scenic Byway traverses approximately 60 miles of the Jefferson National Forest and offers scenic views of mountains and rural Americana.

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The **American Automobile Association (AAA) program** introduces travelers to Virginia's scenic amenities. This program has also been in existence since 1988 and emphasizes directing travelers to little known interesting places. Under the AAA program, there are five classifications of roads. These include traditional roads that best represent the state's Cultural Heritage, Historic, and Natural Beauty as well as Classic roads which are premier drives derived from all of the classifications. Virginia is host to 15 AAA roads. Some AAA designated roads include interstates that traverse through scenic areas lightly developed of the state, like US I-81.

Thematic driving trails are growing in popularity and many more are being recognized and promoted for tourism. Most of Virginia's thematic trails help tell historical stories that crisscross the state tying small and large communities together through the experience of past events. Growing popularity for thematic trails inclusive of Virginia Byways may present opportunities for partnerships with the Virginia Tourism Corporation, DCR, VDOT and other organizations for promotion and management of these corridors.

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Thematic Driving Trails - <http://www.virginia.org/site/features.asp?FeatureID=182>

1. Civil Rights In Education Heritage Trail - www.varetreat.com
2. Civil War Trails (10+ tours) - 1-888-CIVIL WAR <http://www.civilwar-va.com/virginia>
or <http://www.vdot.virginia.gov/infoservice/prog-byways-civil-war.asp>
 - a. Northern Virginia - <http://www.vdot.virginia.gov/infoservice/prog-byways-civil-war-nova.asp>
 - b. Peninsula Campaign - <http://www.vdot.virginia.gov/infoservice/prog-byways-civil-war-penn.asp>
 - c. Shenandoah Valley - <http://www.vdot.virginia.gov/infoservice/prog-byways-civil-war-shen.asp>
 - d. Lee vs. Grant - <http://www.vdot.virginia.gov/infoservice/prog-byways-civil-war-lee'sroute.asp#Lee%20vs.%20Grant>
 - e. Lee's Retreat - www.varetreat.com
 - f. Wilson-Kautz - www.varetreat.com
3. Virginia Birding and Wildlife Trails - www.dgif.state.va.us
4. Journey Through Hallowed Ground - <http://www.cr.nps.gov/nr/travel/journey/intro.htm>
5. Crooked Road Music Trail - www.thecrookedroad.org
6. Captain John Smith James River Trail - www.JohnSmithTrail.org
7. Regional Driving tours – <http://www.virginia.org/site/features.asp?FeatureID=182>
 - a. Blue Ridge Highlands — Music, Crafts & Mountain Memories!
 - b. Central Virginia — An African-American Heritage Tour
 - c. Chesapeake Bay — A Water-Lover's Dream
 - d. Eastern Shore — Birdwatchers' Paradise
 - e. Hampton Roads — Driving Tour Through Military History
 - f. Heart of Appalachia — Daniel Boone Territory
 - g. Northern Virginia — The World War II Heritage Trail
 - h. Shenandoah Valley — Southern Driving Tour Through History & Culture
8. Daniel Boone Wilderness Trail - www.danielboonetrail.com
9. George Washington - <http://www.virginia.org/site/features.asp?FeatureID=200>
10. World War II - <http://www.virginia.org/site/features.asp?FeatureID=181>
11. African-American Heritage - <http://www.virginia.org/site/features.asp?FeatureID=196>
12. Alleghany Highlands - <http://www.vdot.virginia.gov/infoservice/prog-byways-alleghany-highlands.asp>
13. Capital Country - <http://www.vdot.virginia.gov/infoservice/prog-byways-cap-sites.asp>
14. Virginia's Millennium Legacy Trails - <http://www.vdot.virginia.gov/infoservice/prog-byways-legacy.asp>
15. Northern Virginia - <http://www.vdot.virginia.gov/infoservice/prog-byways-nova-sites.asp>
16. Southern Highlands - <http://www.vdot.virginia.gov/infoservice/prog-byways-so-highlands.asp>

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As more emphasis is put on traveling and tourism, it becomes increasingly important to protect the resources that provide pleasurable, scenic experiences for travelers. The challenge for scenic byways corridors is to integrate community development and growth into the protection of the scenic integrity of designated and potential byway corridors throughout the Commonwealth.

[Begin Box]

- Federal Highway Administration, *Community Guide to Planning & Managing a Scenic Byway*, US Dept. of Transportation, National Scenic Byways Resource Center.
 - National Park Service, *Byway Beginnings: Understanding, Inventorying, and Evaluating a Byway's Intrinsic Qualities*, National Scenic Byways Program, 1999.
 - Scenic America, *Conserving Our Treasured Places: Managing Visual Quality on Scenic Byways*. America's Byways Resource Center.
- Yamada, Alan; et al, *Scenic Byways: A Design Guide for Roadside Improvements*, USFS, 2003.
- Virginia Department of Transportation, "Virginia's Scenic Byways," <http://www.vdot.virginia.gov/infoservice/faq-byways.asp>, 2006.

[End Box]

Chapter VII-F. Scenic Rivers

“America’s waterways have always been a vital force providing opportunities for commerce, routes for exploration, inspiration of ideas, means of recreation, sources of drinking water and creating much of the natural beauty that helps define our national identity. Perhaps most importantly, our waters seamlessly connect our citizens, our land, and our communities to one another. ...Through out history, the path to prosperity has been plied down America’s waterways.” As quoted by Al Gore (Cronin and Kennedy, p.11)

The Virginia Scenic Rivers Act of 1970 created a statewide program to protect and preserve rivers or sections of rivers having natural or scenic beauty and cultural and historic interest. Since the first scenic river designation in 1975, 22 rivers, and over 480 river miles have been recognized, including one State Historic River. Thirteen additional rivers have been evaluated and found to qualify for scenic river designation. The most recent addition to the scenic rivers program is the Meherrin River located in Brunswick County and designated by the 2006 Virginia General Assembly.

[Add Photo Box of Meherrin River Signing]

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Benefits of Virginia Scenic River Designation

- Provides opportunities to consider scenic, cultural and historic resources in planning and design.
- Requires Federal Energy Regulation Commission (FERC) reviews of hydro or related project proposals to include multiple river values for affected rivers.
- Encourages closer review of projects and proposals by state agencies and localities.
- Requires General Assembly authorization for dams.
- Allows for continued appropriate riparian land uses.
- Allows state, local and federal projects on designated waterways to be reviewed and monitored by the Virginia Scenic River Board.
- Provides a framework for appointment of a local Scenic River Advisory Committee.
- Provides eligibility for land use tax considerations, if locally adopted.
- Provides the potential for additional economic benefits to the adjacent community.

More Scenic River Program information can be found at:

<http://www.dcr.virginia.gov/prt/srmain.htm>

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Findings

- Virginia’s most precious natural resources include over 49,000 miles of rivers and streams.

- The Scenic Rivers program is over 30 years old and it continues to expand and support statewide river resources.
- Rivers and streams provide drinking water, recreational opportunities, habitat for fish and wildlife, resources for commerce, and some of our most scenic vistas.
- Informal, traditional river access sites are being lost when land use changes from agricultural to residential and the new smaller lot owners prohibit public use of the property.
- Scenic River designation promotes a greater awareness of the value of rivers among the citizens of Virginia.
- Virginia's rivers are facing increasing threats from pollution associated with development, poor farming practices and urbanizing landscapes.
- Waterways should be managed from a multi-use approach, including scenic and cultural values, wildlife resources, and recreation potential as well as appropriate commercial development potential.
- Planning for an entire watershed, designation of appropriate land uses near waterways and implementation of riparian buffers to protect stream-bank erosion and filter adjacent agricultural runoff is required to protect water resources.
- Ninety percent (90%) of all the physical resources cherished by residents of a region fall in the water, wetlands, and steep topography (Lewis, p.77).

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Recommendations

- Local government should nominate candidate streams and rivers for study and possible Scenic River designation.
- DCR should continue to administer and promote the Scenic Rivers Program and to re-evaluate and expand its base of information about rivers and streams.
- DCR should include Scenic River corridors, existing and qualified, in the green infrastructure land planning model.
- DCR and the Scenic River Advisory Board should promote rivers qualifying for inclusion in the program to be designated. By focusing on rivers already studied, localities and the state can maximize the value of the Scenic River program and its influence for protection of river resources.
- DCR should reevaluate designated rivers to determine continued eligibility based on current conditions to ensure the integrity of the Scenic Rivers Program.
- The Scenic River Advisory Board, hereafter referred to as the Board, should develop a process to enhance support of the program at all levels of government for better maintenance and management of scenic rivers.
- DCR should continue to review and comment on various permit applications to state and federal regulatory agencies with respect to possible impacts to existing and potential components of the Scenic River system. DCR will also continue to review and comment on all bridges to provide visual and boating access to rivers whenever possible.

- DCR should assist local governments with development of planning tools (e.g., land-use overlays, corridor management plans) that will afford special recognition and protection to Virginia's Scenic Rivers.
- Scenic river signage should be coordinated with VDOT and DCR under the Tourist Oriented Directional Signage (TODS) program to improve scenic river program awareness.

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“The Commonwealth of Virginia has diversity of rivers and streams that is matched by few other states. ... The scenery of these streams varies from remote canyons to urban areas, from coastal swamps to mountain cliffs, from open pasturelands to dense forests.” (Corbett, p. 1)

[Begin box]

Insert Photo of New River

[End box]

Program Background

The Virginia Scenic Rivers system comprises both tidal and non-tidal rivers, and extends from the coastal region of Virginia to the mountains. The fabric of the system includes rivers whose corridors are rich in history, natural resources and recreational opportunities. Many of the designated rivers flow through rural and undeveloped areas of the state. However, the Falls of the James, Appomattox, and Rappahannock Scenic Rivers trace their respective courses through more developed environments and cities. Each river is unique, but all possess qualities that make them worthy of recognition.

“One hundred years ago the importance of the Urban James River was almost totally commercial. It provided a seaport, a power source, a raw materials source, and a waste site. ... Our priority is to preserve its beauty, its flora and fauna, its artifacts, its water quality, and its ambience [as a] most important amenity.” (Bryan, p. 18)

The Designation Process

Local support is needed to introduce a bill for scenic river designation or extension by the Virginia General Assembly. The Virginia General Assembly and the governor must approve each addition to Virginia’s Scenic River system. The inclusion of a river in the scenic rivers system provides a framework whereby the preservation of that river is encouraged. The elements of this protective framework are delineated below in the order in which they appear in the Scenic Rivers Act.

[Begin box]

Currently there are several scenic river extensions at various stages of consideration – Goose Creek, Rappahannock, Rapidan, Staunton, Tye and New. [Insert bar graph] [End box]

The *Code of Virginia* §10.1-401, assigns the following duties and powers to the director of the Department of Conservation and Recreation (DCR):

- Identify rivers or river segments, including shores and natural environs, to be considered for designation.
- Conduct evaluations of rivers or segments to be considered for designation.
- Recommend rivers or segments to be considered for designation to the governor and General Assembly.

- Should a river be designated, the DCR director may acquire real property or interest in lands which offer protection to the Scenic River, but eminent domain cannot be exercised in acquiring any such property or interests.

The *Code of Virginia*, §10.1-402, provides that DCR may fully review and make recommendation to federal, state and local agencies regarding the planning for use and/or development of water and related land resources so that scenic rivers resources are protected.

The *Code of Virginia*, §10.1-407, states that after the designation of a scenic river, no dam or other structure that impedes natural flow thereof shall be constructed, operated or maintained in such river unless specifically authorized by an act of the General Assembly.

- The Scenic Rivers Act prescribes the powers and duties of the administering agency, DCR (§10.1-405). The duties include:
- Administration of the scenic river system to preserve and protect its natural beauty and to assure its use and enjoyment for its scenic, recreational, geologic, fish and wildlife, historic, cultural or other assets and to encourage the continuance of existing agricultural, horticultural, forestry, and open space land and water uses
- Periodically surveying each scenic river and its immediate environs and monitoring of all existing and proposed uses of each scenic river and its related land resources
- Assisting local governments with problem solving associated with the Virginia Scenic Rivers System in consultation with the Director, the Board and other advisory committees.

Scenic Rivers Advisory Board

The *Code of Virginia*, §10.1-406 established the Virginia Scenic River Board, consisting of citizen representatives from around the Commonwealth be appointed by the Governor. This Board considers all issues, plans and proposals that could alter rivers within the scenic river program and advises the DCR director and the agency regarding these matters. On the next year, this Board intends to develop a process to enhance support of the program at all levels of government for better maintenance and management of scenic rivers. Working with DCR, local and professional groups, the Board plans to host a workshop on scenic river issues. As part of this effort, a *Scenic River Manual*, outlining the process, benefits and procedures of corridor management plans will be developed and distributed.

Prior to 2003, each designated scenic river had a gubernatorial appointed local advisory board. Currently if citizens and localities surrounding a particular scenic river wish to appoint a local advisory board to advise on river protection issues, they can request such a board be appointed by the DCR Director. In consultation with the Director, local governments shall have the authority, where a committee has not been established pursuant to Subdivision A 4 of Section 10.1-401, to appoint a local scenic river advisory committee to advise the local government and the Director in administering that section of the designated scenic river within the governments jurisdiction.

DCR staff will provide technical assistance as needed to that local advisory board. The Historic Falls of the James and Goose Creek are two local scenic river advisory boards that remain active and provide input to the state Scenic Rivers Advisory Board. The state and local advisory boards work closely with local government agencies and area citizens providing expertise instrumental in resolving resource management issues. DCR continues to provide technical assistance to local communities on river corridor planning, preservation and management upon request from local government and organizations.

Local Government Involvement

Scenic river protection and management rests with local governments. Through comprehensive planning, zoning, and special use tax incentives, localities are able to maintain the quality of their scenic river resources while allowing continued development and other important landowner activities. The Department of Conservation and Recreation works with local governments and citizens to study potential scenic rivers and encourages their participation in the evaluation process. Following evaluation, if the river qualifies as a scenic river, the locality must advocate for designation. Once designated, local governments have the primary responsibility for land use protection along the designated corridor.

Steps to Designation

Scenic river designations result from local partnership initiatives of concerned citizens, local governments, state agencies and the Virginia General Assembly. This partnership begins in the evaluation phase and continues through and after the designation process. The grassroots effort of many citizens designates rivers and insures the quality and continued success of the program.

A methodology has been established that is used to objectively evaluate potential scenic rivers and determine their eligibility for designation. The same tool is used to monitor changes on system components to ensure each section meets the standards. The evaluation and ranking procedure provides data for formulating goals, objectives and priorities by the localities for management of designated scenic river corridors.

- 1) The designation and scenic river nomination process is initiated with a local government governing board's request to DCR for a study of the candidate river segment.
- 2) DCR and local representatives then conduct a study and determine the eligibility of the river segment based on scenic river attributes.

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Scenic River Designation is based on the following attributes:

Stream corridor vegetation	Quality of fishery
Streambed and stream flow modifications	Rare, threatened or endangered species
Human development of visual corridor	Water quality
Historic features	Parallel roads
Landscape	River crossings

Other special features affecting aesthetics

[Insert Photo of Big Cedar Creek in Russell County][End box]

- 3) Following the evaluation, DCR writes a report of the findings and makes a determination of eligibility for the studied river.
- 4) The local governing board must pass a resolution endorsing designation of the qualifying river segment after the study is completed.
- 5) Once the resolution is passed, a legislative sponsor will submit the bill to the General Assembly.
- 6) After acceptance by the General Assembly, the Governor signs the bill designating the river as a Virginia Scenic River.
- 7) The localities then work with the Virginia Department of Transportation (VDOT) to erect scenic river signage and work with the Virginia Scenic Rivers Boards to manage the river resources.

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WHAT STATE SCENIC RIVER DESIGNATION DOES

- Designation encourages protection and preservation of the river.
- Designation declares the protection of a river's scenic values to be a beneficial purpose of water resource policy.
- Designation identifies the Department of Conservation and Recreation (DCR) as the administering agency.
- Designation requires the Virginia Scenic Rivers Advisory Board, whose members are appointed by the Governor, to advise the Director of DCR on the federal, state or local plans that impact the designated river segment and to give local citizens a voice in river-related issues.
- After designation, the General Assembly must approve construction of any dam that would result in an impediment to the natural flow of the river.
- For properties along designated scenic rivers, a special tax assessment may be given to reduce the tax liability, as valued by the State Land Evaluation Advisory Council, if adopted by the locality.
- The Federal Energy Regulatory Commission (FERC) recognizes Virginia's designated Scenic River System. This acknowledgement of the program ensures that the qualities of the designated river are considered during licensing of federal projects on that river.

WHAT STATE SCENIC RIVER DESIGNATION DOES NOT DO

- Designation does not give the state control over land use.
- Designation carries with it no land use controls.
- Designation does not give the public any right to use privately owned land.
- Virginia does not commercially promote its scenic rivers.
- Recreational use of the rivers currently in the Scenic Rivers System has not increased any more than the use of high quality streams that are not in the system.

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Federal River Initiatives

Several federal agencies help to manage, protect and promote the river systems of Virginia. [See program comparison chart.] The Department of the Interior's Wild and Scenic Rivers Program, which has been in existence since 1968, is administered by the National Park Service and helps to protect river sections through designation and planning technique implementation or ownership. None of the 156 federally designated rivers are located in Virginia. Currently, there is an effort to designate part of the New River in Virginia and West Virginia as a national scenic river. [\[Insert Program Comparative Chart\]](#)

There is also a program administered by the Environmental Protection Agency (EPA) called American Heritage Rivers Initiative. This program is geared toward fostering communities to take advantage of their river resources for economic revitalization and protection of resources. Federal resources are coordinated with the help of a river navigator. Both the New and the Potomac Rivers and its tributaries are recognized under this program.

An amendment to the National Trails System Act in 2006 was proposed to designate the Captain John Smith Chesapeake National Historic Trails. This trail covers approximately 3,000 miles along the Chesapeake Bay and its tributaries, with a major portion along Virginia's Bay and rivers. At the same time, a resolution in the senate had been brought forth to recognize Virginia's James River as "America's Founding River." These efforts illustrate the immense importance of rivers and their protection both at a national and state level. Because the John Smith Trail and Founding River initiatives are a part of the Jamestown 400 celebration, there is additional attention to these nationally significant resources.

The United States Forest Service, although it does not have a designation process, helps protect the waters of Saint Mary's Virginia Scenic River. The river is completely contained within the National Forest Service lands. Management is the responsibility of the USFS, as opposed to private or other governmental entities, which can make the protection easier.

The Environmental Protection Agency (EPA) has a program that helps preserve and promote the sensitive aspects of rivers. The America's Most Endangered Rivers Program, in existence since 1986, recognizes the rivers with critical and near-term threats. The threats can be from a number of sources, including damming, over development, industry and sewage waste. Each year a report identifies threatened rivers and offering solutions for protection. It also highlights the successes of rivers listed in previous years. In 2006, the Shenandoah River was listed. Seven other Virginia rivers have been on the endangered rivers list in previous years with various success rates. Those rivers are: James, Saint Mary's, Clinch/Powell, Potomac, Pagan, Mattaponi and Paine Run.

The Virginia Scenic Rivers Program, as well as the federal programs, focuses on conservation and appropriate use of scenic rivers and river corridors. All state and federal agencies must consider how their projects and programs affect state scenic rivers.

“...our rivers are a part of our national commons – a meeting ground where Americans from all walks of life gather to trade, reflect, rejoice, and restore. As we move into the twenty-first century with a renewed sense of stewardship and appreciation for our rivers, we must carry that spirit with us.” As quoted by Al Gore (Cronin and Kennedy, p.12)

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Resources for Scenic Rivers:

Bryan, John, *The James River in Richmond: Your guide to enjoying America's best urban waterway*, Charles Creek Publishing, 1997.

Corbett, H. Roger, *Virginia Whitewater: A paddler's guide to the rivers of Virginia*, Seneca Press, 2000.

Cronin, John and Kennedy, Robert F. Jr., *The Riverkeepers: Two activists fight to reclaim our environment as a basic human right*, Scribner, 1997.

Lewis, Philip H. Jr., *Tomorrow By Design: A Regional Design Process for Sustainability*, John Wiley and Sons, Inc., 1996.

End box]

Chapter VII-G. Virginia's Watershed Programs

"The health of our waters is the principal measure of how we live on the land." Luna Leopold

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Watersheds Findings

- Programs and partnerships have been established in Virginia to address watershed planning and management.
- Local communities benefit from state and federal programs that address water quality and watershed management.
- Many outdoor recreation activities are dependent upon watershed management to sustain natural resources and water quality.
- In 2002, of the Virginia streams monitored, Virginia's Department of Environmental Quality listed 4,318 stream/river miles as impaired. This is an increase of 1,484 since 1998 (<http://www.deq.state.va.us/wqa/303d.html>).
- Additional funding is needed to achieve the water quality goals of the Chesapeake 2000 multi-state Bay agreement. (<http://www.chesapeakebay.net/agreement.htm>).

Watersheds Recommendations

- DCR watershed management planning outreach should interface and be incorporated into green infrastructure initiatives.
- Planners and decision makers should balance development with green infrastructure in relation to local watershed designations.
- Partnerships between local jurisdictions and nonprofit organizations working to facilitate land use planning and conservation options at a local level should be encouraged, nurtured, and recognized.
- Regional and local governments should protect the management of watersheds by integrating watershed management planning with local land use ordinances and comprehensive plans through DCR's Chesapeake Bay Preservation Act land use management initiative.
- DCR should investigate ways to expand department-wide communications with the Soil and Water Districts and field offices. CBLA's liaisons can support the DCR field offices by drafting ordinances and providing watershed technical assistance to incorporate water quality measures into local comprehensive plans.

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Importance of Watershed Planning and Programs to Outdoor Recreation and Conservation Lands

Water is key to life and its sustainability. While Virginia is rich in water resources, as populations and development increases, it will become even more important to maintain

adequate water within respective watersheds. Thoughtful watershed planning and management has a direct bearing on the quality of life within Virginia's diverse watersheds. Understanding and incorporating watershed protection into development using green infrastructure land planning models and watershed planning is essential for maintaining and improving water quality and insuring future generations have adequate water supplies.

The enjoyment of popular outdoor recreation activities such as fishing, swimming and boating is dependent on access to clean water. Water supply issues relating to minimum instream flow affect outdoor recreation opportunities. Water quality also must be maintained by ensuring all streams and rivers in the Commonwealth are available for primary contact recreation and suitable for providing adequate drinking water for existing and future populations. The linkage of many types of outdoor recreation and land conservation to water quality makes the understanding and appropriate management of watersheds important to the welfare of citizens of the Commonwealth.

Virginia watershed boundaries

Every square inch of land in the Commonwealth is within a drainage area called a watershed. A watershed is simply the area of land that drains into a body of water. Bodies of water used to define a watershed may be a creek, pond, river, bay or ocean. The size of a watershed usually is related to the size of the body of water. For example, the Swift Creek watershed will be a local, smaller watershed than the Appomattox River watershed and that watershed will be smaller than the James River and Chesapeake Bay watersheds, which ultimately receive water from each of the smaller watershed areas.

Virginia has 497 subwatersheds that make up the state's 14 major watersheds. These 14 watersheds are divided into two main drainages, the Chesapeake Bay and the Southern Rivers watersheds. The Chesapeake Bay watershed includes the geographic area in the northern portion of the state where all waters eventually drain across the state to the Chesapeake Bay or Atlantic Ocean. The Southern Rivers watershed represents the lands draining the southern portion of the state into the Pamlico Sound in North Carolina or across the southwestern portion of the state into the Mississippi River and eventually the Gulf of Mexico.

<http://www.dcr.virginia.gov/sw/docs/wshedsclr.pdf>

[insert state watershed map]

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Southern Rivers Watersheds

Albemarle Sound, Coastal

Big Sandy

Chowan

Clinch-Powell

Holston

New

Roanoke

Radkin

Chapter VII. Virginia Watersheds

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VirginiaWatersheds101906.doc

Chesapeake Bay Watersheds

Chesapeake Bay, Coastal

James

Potomac-Shenandoah

Rappahannock

York

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Watershed Programs

The Department of Conservation and Recreation has eight watershed field offices (<http://www.dcr.virginia.gov/sw/swintro.htm>) providing support to local governments, soil and water conservation districts and communities in watershed program initiatives dealing with watershed planning, non-point source pollution removal, water quality related issues, conservation initiatives, education, outreach and training..

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Southern Watersheds Field Offices

- **Abingdon** (Tennessee-Big Sandy Watersheds Office): 252 W. Main Street, Suite 3, Abingdon, Va. 24210; phone: (276) 676-5528, fax #: (276) 676-5527
- **Dublin** (New River Watershed Office): P. O. Box 1506, Dublin, Va. 24084; phone: (540) 643-2590, fax #: (540) 643-2597
- **Suffolk** (Chowan-Albemarle Coastal Watersheds Office): 1548 Holland Road, Suffolk, Va. 23434; phone: (757) 925-2468, fax #: (757) 925-2388

Chesapeake Bay Watersheds Field Offices

- **Clarksville** (Roanoke Watershed Office): 11632 Highway 15 South, Clarksville, Va. (434) 374-3648
- **Richmond** (James River Watershed Office): 101 N. 14th St., 11th Floor, Monroe Building, Richmond, VA. 23219; phone (804) 225-4468, fax (804) 371-0771
- **Staunton** (Shenandoah Watershed Office): 44 Sanger Lane, Suite 102, Staunton, Va. 24401; phone: (540) 332-9991, fax #: (540) 332-8956
- **Tappahannock** (York-Rappahannock Watershed Office): P. O. Box 1425, Tappahannock, Va. 22560; phone: (804) 443-6752, fax #: (804) 443-4534
- **Warrenton** (Potomac Watershed Office): 98 Alexandria Pike, Suite 33, Warrenton, Va. 20186-2849; phone: (540) 347-6420, fax #: (540) 347-6423

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Watershed tools and technical assistance

<http://www.dcr.virginia.gov/sw/swintro.htm>

Various government and nonprofits agencies are working to implement watershed management tools to protect water quality. In planning and maintaining outdoor recreation and conservation facilities appropriate watershed management ensures that surface and ground water supplies, drinking water quality, soil and streambank stability, wildlife habitat, real estate values, economic vitality and quality of life will be sustained. DCR provides technical assistance, guidance and information on local and regional watershed management planning. As the lead agency for non-point-source pollution control, DCR produced a DVD on watershed planning guidebook entitled *Catch the Watershed Wave, A Case Study on small watershed planning in two Virginia Communities*. The DVD encourages local planners to consider watershed boundaries and to include a wide range of economic, environmental and social factors when prioritizing goals. The DVD is a companion tool for watershed planning entitled, *Virginia's Local Watershed Management Planning Guide, A Community Water Quality Approach* (<http://www.state.va.us/dcr/sw/docs/wshedguideb2b.pdf>).

Watershed management programs connect local needs with federal and state regulations. A summary of watershed management opportunities for planning and sustaining outdoor recreation and conservation areas are summarized below.

[Begin text box or indent to make these programs subtopics of the Watershed Tools and Mechanisms – Perhaps consider the list in 2 columns]

Virginia Water Quality Improvement Act (VAWQIA)

<http://www.dcr.virginia.gov/sw/wqia.htm>

Through this program the Department of Conservation and Recreation's regional watershed offices works with local governments to develop effective nonpoint source (NPS) pollution reduction strategies. These strategies maintain and restore water quality. Rainwater and runoff needs to be managed to minimize NPS pollution.

(subheading) Chesapeake Bay Preservation Act

www.dcr.virginia.gov/dcbcla

The Virginia General Assembly enacted the Chesapeake Bay Preservation Act in 1988. The Act is a critical element of Virginia's multifaceted response to the interstate Chesapeake Bay Agreement. The Bay Act establishes a cooperative relationship between the Commonwealth and local governments aimed at reducing and preventing nonpoint source pollution from new development and redevelopment. The Bay Act, like many other environmental protection programs, is an extension of the public trust doctrine. The beds of Virginia's streams, rivers and estuaries and the waters above them are held and managed by the Commonwealth for the benefit of all Virginians.

The Division of Chesapeake Bay Local Assistance (CBLA) within the Department of Conservation and Recreation implements the Chesapeake Bay Preservation Act and participates in the Environmental Protection Agency's multi-jurisdictional Chesapeake Bay Program. CBLA addresses the impact of land use upon the waters that feed the Chesapeake Bay by working directly with local governments. A current initiative of DCBLA is to work with localities to

incorporate specific water quality protection measures such as low impact development into local ordinances. Part of this effort will involve CBLA staff promoting the integration of watershed management planning into local comprehensive plans and local ordinances.

Stormwater management

<http://www.dcr.virginia.gov/sw/stormwat.htm>

The Department of Conservation and Recreation stormwater management program seeks to protect water quality and property from damages caused by increased volume, frequency and peak rate of stormwater runoff. This program also protects resources from increased nonpoint pollution carried by rainwater runoff.

Erosion & sediment control

<http://www.dcr.virginia.gov/sw/e&s.htm>

The Department of Conservation and Recreation provides on-the-ground assistance to local staff and the private sector through a training and certification program. Staff also provides periodic evaluations to control soil erosion, sedimentation, and nonagricultural runoff from regulated “land-disturbing activities to prevent degradation of property and natural resources.

Agricultural conservation practices

<http://www.dcr.virginia.gov/sw/costshar.htm>

DCR provides funding, guidance and technical assistance to plan and install agricultural conservation practices.

Nutrient management

<http://www.dcr.virginia.gov/sw/nutmgt.htm>

This DCR program certifies private and public sector nutrient management planners. The program offers technical assistance to local farmers, planning staff, colleges, universities and other state agencies to development nutrient management plans.

Nonpoint source pollution biennial assessment and prioritization

This program evaluates potential for water quality degradation due to nonpoint source (NPS) pollution on a hydrologic unit basis. The assessment indicates where water quality degradation might have its greatest impact to better target water quality improvement solutions.

Riparian buffer programs

<http://www.dof.virginia.gov/rfb/index.shtml>

The riparian area is that portion of land located immediately adjacent to streams, lakes, or other surface waters. Riparian areas differ from the uplands because of their high levels of soil moisture; frequent flooding, and the unique assemblage of plant and animal communities. Through the interaction of their soils, hydrology, and biotic communities, riparian forests maintain many important physical, biological, and ecological functions and important social benefits. The Chesapeake Bay Preservation Act requires 100-foot riparian buffers along all perennial streams and wetlands. This requirement is administered by DCR’s Chesapeake Bay Local Assistance staff, who are also available to provide information and guidance on buffers to localities outside of the Chesapeake Bay Preservation Act area.

Homeowner Programs

Stewardship education programs that focus on backyard gardens and horticulture as a recreational activity have great potential to incorporate environmentally friendly techniques into land management on a personal level. Such an approach to backyard gardening and yard care is directly correlated with good watershed management and improvement of water quality. Promoting an environmentally friendly stewardship message for gardeners through the many existing programs has the potential over time to minimize the impacts of developed landscapes and improve water quality in all the watersheds of the Commonwealth.

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Many state and nationally recognized efforts provide wildlife and water quality friendly education to the gardening community. These programs are important to philosophies of acting locally for watershed improvement. Some links for further information on this topic include:

Virginia Department of Conservation and Recreation

<http://www.dcr.virginia.gov/sw/docs/yardcare.pdf>

Virginia Cooperative Extension

<http://www.ext.vt.edu/resources/>

Backyard Wildlife Habitat

<http://www.ext.vt.edu/pubs/wildlife/426-070/426-070.pdf>

Habitat @ Home

<http://www.dgif.virginia.gov/wildlife/habitat/habitat.asp>

BayScapes for Wildlife Habitat

<http://www.dgif.virginia.gov/wildlife/habitat/bayscapes.pdf>

Backyard Conservation Wildlife Habitat

<http://www.dgif.virginia.gov/wildlife/habitat/backyardconservation.pdf>

Native Plants for Conservation Restoration and Landscaping

<http://www.dcr.virginia.gov/dnh/native.htm>

National Wildlife Federation Backyard Habitat

<http://www.nwf.org/backyardwildlifehabitat/>

Text box End]

[Picture of BayScapes landscape]

Green roofs

http://www.lid-stormwater.net/greenroofs/greenroofs_home.htm
www.greenroofs.com

Green roofs, also known as vegetated roof covers, eco-roofs or nature roofs, are multi-beneficial structural components that help to mitigate the effects of urbanization on water quality by filtering, absorbing or detaining rainfall. They are constructed of a lightweight soil media, underlain by a drainage layer, and a high quality impermeable membrane that protects the building structure. The soil is planted with a specialized mix of plants that can thrive in the harsh, dry, high temperature conditions of the roof and tolerate short periods of inundation from storm events.

Center for Watershed Protection

<http://www.cwp.org/>

Founded in 1992, the **Center for Watershed Protection** is a non-profit 501(c)3 corporation that provides local governments, activists, and watershed organizations around the country with the technical tools for protecting some of the nation's most precious natural resources: our streams, lakes and rivers. The Center has developed and disseminated a multi-disciplinary strategy to watershed protection that encompasses [watershed planning](#), [watershed restoration](#), [stormwater management](#), watershed research, [better site design](#), [education and outreach](#), and [watershed training](#).

Soil and Water Conservation Districts

<http://www.vaswcd.org/> or <http://www.dcr.virginia.gov/sw/swcds.htm>

Soil and water conservation districts (SWCDs) were established in the 1930s to develop comprehensive programs and plans to conserve soil resources, control and prevent soil erosion, prevent floods and conserve, develop, utilize and dispose of water. Today, forty-seven districts serve as local resources for citizens in nearly all Virginia localities. Since the mid-1980s, DCR has relied heavily on districts to help deliver many programs aimed at controlling and preventing nonpoint source (NPS) pollution, often on a watershed basis.

United States Department Agriculture, National Resources Conservation Service

<http://www.nrcs.usda.gov/about/agency.html>

The National Resources Conservation Service (NRCS) provides technical and financial assistance to help agricultural producers and others care for the land.

NRCS has six mission goals that include high quality, productive soils; clean and abundant water; healthy plant and animal communities; clean air; an adequate energy supply; and working farms and ranchlands. To achieve these goals, the Agency implements three strategies.

- Cooperative conservation: seeking and promoting cooperative efforts to achieve conservation goals.
- Watershed approach: providing information and assistance to encourage and enable locally-led, watershed-scale conservation.
- Market-based approach: facilitating the growth of market-based opportunities that encourage the private sector to invest in conservation on private lands.

The Nature Conservancy watershed programs

The Nature Conservancy is a leading international, nonprofit organization dedicated to preserving the diversity of life on Earth. The mission of The Nature Conservancy is to preserve the plants, animals and natural communities that represent the diversity of life on earth by protecting the lands and waters they need to survive. This mission is inclusive of programs and

initiatives directed at watershed protection. (I am thinking about just providing a list of these projects with the website - feedback?)

[Following are subset of Nature Conservancy Programs

The Nature Conservancy watershed programs active in Virginia include the following:

Clinch Valley Program

<http://www.nature.org/wherewework/northamerica/states/virginia/preserves/art15030.html>

Spanning 2,200 square miles in the remote mountains and valleys of southwestern Virginia and northeastern Tennessee, the Clinch Valley Program area comprises the watersheds of the Clinch, Powell, and Holston rivers. These last free-flowing rivers of the Tennessee River system harbor more at-risk fish and mussel species than any other river in the nation and the highest concentration of imperiled species in the mainland United States.

The Conservancy works to ensure the survival of these fragile lands and waters through creative local partnerships designed to enhance water quality, prevent toxic spills, and improve farming practices. Innovative strategies in the region include a pilot project for ecological restoration, reforestation, and carbon sequestration on coal mined lands, as well as the Conservation Forestry Program. The latter initiative fosters partnerships with private landowners to promote the economic productivity of working forests, while protecting the ecological health of the landscapes in which they occur.

Rivanna River Basin Commission

<http://www.nature.org/wherewework/northamerica/states/virginia/news/news1614.html>

Virginia's General Assembly passed legislation in early 2004 authorizing the Rivanna River Basin Commission. However, the Commission will exist only on paper until substantial private funding can be secured. One of the Commission's most critical responsibilities will be to develop and disseminate comprehensive science-based information to local governments and residents. Activating the River Basin Commission today would arm these community leaders with information necessary to make sound decisions for the Rivanna's future. This innovative approach will provide a model for communities across Virginia and the nation to save their rivers.

Southeastern Virginia Southern Rivers Program

<http://www.nature.org/wherewework/northamerica/states/virginia/preserves/art15066.html>

The Southern Rivers Program concentrates on five significant river systems in southeast Virginia. The North Landing, Northwest, Meherrin, Nottoway, and Blackwater rivers are included in the Nature Conservancy's program initiatives. The Northwest River provides drinking water to 60 percent of the City of Chesapeake. Near the headwaters of the Meherrin, Nottoway, and Blackwater Rivers, Piney Grove Preserve harbors the northernmost population of the endangered red-cockaded woodpecker. All five rivers are mostly freshwater and are important wildlife corridors collectively supporting a third of the state's non-tidal wetlands. Through creative partnerships, land acquisition, ecological management, and other conservation strategies, the Nature Conservancy's Southern Rivers Program works to protect the area's lands and waters.

Chesapeake Rivers Program

<http://www.nature.org/wherewework/northamerica/states/virginia/preserves/art2671.html>

The Nature Conservancy's Chesapeake Rivers Program addresses the Rappahannock, Mattaponi, and Pamunkey rivers and Dragon Run. These rivers, located in the Northern Neck and Middle Peninsula, wind through 2,000 square miles of forests, farms, and American history. The program assists the region in planning for the future's changing landscape. Incompatible land uses and shoreline development promise to place tremendous stress on wetland, marsh, and riparian habitats along these Chesapeake Bay tributaries. The Conservancy is focused on preserving the region's diverse wildlife, migratory birds, anadromous fish, invertebrates, and rare plants, while keeping ecological processes intact.

Green Sea Program

<http://www.nature.org/wherewework/northamerica/states/virginia/preserves/art2694.html>

The Nature Conservancy's Green Sea Program focuses on the marshes of southeastern Virginia and northeastern North Carolina. The globally rare, wind-tide marshes along the Northwest and North Landing rivers are the finest remaining examples of this habitat in the world. The Virginia least trillium, eastern big-eared bat, and canebrake rattlesnake are just a few of the imperiled species giving this area Virginia's highest concentration of rare species east of the Blue Ridge. The Nature Conservancy has protected close to 28,000 acres of Green Sea wetlands across both states. The Green Sea Program plays an active role in the region's open-space-protection planning process.

end subset of Nature Conservancy programs]

(main heading) Southern Rivers Watershed Programs

Southern Rivers Watershed encompasses the southernmost part of Virginia. The various watersheds in this area include ___ acres of land and flow into one of eight subwatersheds. Portions of the Southern Rivers watershed area drain into North Carolina's Pamlico Sound as well as the westernmost rivers draining into the Mississippi Delta.

(subheading) Big Sandy Watershed and the Russell Fork River Connection Project

The Big Sandy watershed covers 11,012 square miles. The Levisa Fork and Russell Fork rivers dominate this region's hydrology. The steep terrain and density of waterways heighten the possibility of flash floods during sudden and intense precipitation periods. Two major dams have been constructed within this watershed, predominantly for flood control. In 1965, John Flannagan Dam and Reservoir was constructed on the Pound River, one of the major tributaries of the Russell Fork River. Fishtrap Lake Dam and Reservoir, situated along the Levisa Fork River near its confluence with the Russell Fork River, was also constructed for flood control. The introduction of these dams dramatically changed the hydrology of this region by impairing the function of the rivers, preventing the natural movement of water and sedimentation through the system. Both the Russell Fork and Levisa Fork Rivers flow northward from the southern portion of the watershed. With abundant rainfall in this region, the rivers and tributaries run deep and swift, carving this landscape and creating deep hollers and tall ridges.

Collaboration between the Elkhorn City Area Heritage Council, the National Trust for Historical Preservation, the National Park Service: Rivers, Trails and Conservation Assistance Program and the 606 Studio design team at California State Polytechnic University, Pomona resulted in a June 2005 study entitled *The Russell Fork River Connection: An Interstate Trail and Open Space Conceptual Plan*. The Russell Fork River region within the Big Sandy watershed was studied to identify issues, opportunities and design recommendations for environmental, recreational and economic enhancement. Conceptual plans for a land and river trail including site and issue based design responses are presented in the document. This document provides a framework to assess, analyze and respond to land planning opportunities and constraints; it is a timely first step towards building a healthy, vital and regenerative future for the region.

(subheading) Tennessee Valley Authority

<http://www.tva.gov>

Millions of people enjoy recreational activities on TVA reservoirs each year. The reservoirs and the 290,000 acres of land surrounding them offer nearly limitless opportunities for fun-filled activities, including water skiing, canoeing, sailing, windsurfing, fishing, swimming, hiking, nature photography, picnicking, birdwatching, and camping.

Through its Clean Water Initiative, which began in 1992, TVA builds partnerships with community residents, businesses, The Nature Conservancy and other non-profits along with government agencies to promote watershed protection. TVA's Watershed Teams are responsible for carrying out the program. They focus on improving water and shoreline conditions so that people and aquatic life can benefit from having clean water.

(subheading) EPA Albemarle-Pamlico National Estuary Program (APNEP)

<http://www.apnep.org/pages/APNEPprogram.html>

The Albemarle-Pamlico National Estuary Program - formerly known as the Albemarle-Pamlico Estuarine Study (APES) - was among the first National Estuary Programs established by the US EPA in 1987. The mission of the APNEP is to identify, restore, and protect the significant resources of the Albemarle-Pamlico estuarine system.

The APNEP is a cooperative effort jointly sponsored by the North Carolina Department of Environment and Natural Resources (DENR) and the U.S. Environmental Protection Agency (EPA) in cooperation with the Virginia Department of Conservation and Recreation (DCR). This unique program targets a broad range of issues and engages local communities in the process.

(main heading) Chesapeake Bay and Coastal Watershed Programs

<http://www.dcr.virginia.gov/sw/bayshed.htm>

The Chesapeake Bay watershed stretches across New York, Pennsylvania, Maryland, Delaware, Virginia, West Virginia and the District of Columbia. In Virginia, the Chesapeake Bay watershed drains over sixty percent of the land area and includes the James, Potomac-Shenandoah, Rappahannock and York rivers. The programs and initiatives that affect the Chesapeake Bay are

numerous. These programs are significant in providing conservation and outdoor recreation in the watershed. A summary of Chesapeake Bay programs follows.

(subheading) EPA Chesapeake Bay Program

<http://www.chesapeakebay.net/>

The multi-jurisdictional Chesapeake Bay Program was formed in 1983 following the scientific determination that the deteriorating health of the Bay needed to be restored and protected. This partnership was established and documented by the first *Chesapeake Bay Agreement* signed by the governors of Virginia, Maryland and Pennsylvania and the mayor of the District of Columbia and the administrator for the United States Environmental Protection Agency. The focus of the initial 1983 agreement was to address nutrient over-enrichment causing toxic pollution and a decline in underwater Bay grasses.

In 1987, the partners renewed the agreement and set additional goals for a 40 percent reduction in nitrogen and phosphorus entering the Bay by 2000. Each partner agreed to develop tributary-specific strategies to achieve this nutrient reduction. While pollution reduction measures were continually implemented, it became evident that more was needed to adequately restore the health of the Chesapeake Bay.

The Chesapeake 2000 or C2K agreement (<http://www.chesapeakebay.net/agreement.htm>) included additional partnerships with Chesapeake Bay headwater states, West Virginia, New York and Delaware. This expanded partnership was created to guide, strengthen, identify and focus pollution reduction measures. Objectives of the new agreement are outlined by categories listing over 100 goals addressing living resource protection and restoration, vital habitat protection and restoration, water quality, sound land use, and stewardship and education. In Virginia these categories are tracked and reported each year by the Virginia Secretariat of Natural Resources. The report is presented to the Virginia General Assembly and posted on the Internet (Susan where are these posted?).

(subheading) Chesapeake Bay and Virginia Tributary Strategies

<http://www.naturalresources.virginia.gov/WaterQuality/index.cfm>

The Virginia General Assembly and multiple governors have proven through leadership and dedication to the Commonwealth's citizenry that Virginia remains committed to restoration of the Chesapeake Bay and its tributaries. State scientists, administrators, politicians, corporate leaders, researchers and volunteers work together, sharing expertise across jurisdictions. The Secretariat of Natural Resources establishes agency policy and programs to meet Chesapeake Bay restoration goals and improve water quality statewide.

The most targeted product to date of the Chesapeake Bay restoration and watershed management is the Virginia Tributary Strategy planning series entitled *The Chesapeake Bay Nutrient and Sediment Reduction Tributary Strategy* published in January 2005 recognizes Virginia's 20 years of accomplishments and summarizes actions needed to achieve the nutrient and sediment reduction goals set in the Chesapeake 2000 Agreement. Current and future actions, processes and projected costs are summarized in this document for Virginia's five major Chesapeake Bay river basins: Shenandoah-Potomac, Rappahannock, York, James and Bay Coastal. Detailed

strategy documents have been developed involving local stakeholders within each of these watersheds and new watershed management tools are continually developed and integrated into these plans.

(subheading) Virginia Coastal Zone Management Program

The Virginia Coastal Zone Management Program helps agencies and localities develop and implement coordinated coastal policies. To do this, the Program relies not on a single centralized agency or entity, but on a network of state agencies and local governments that administer the enforceable laws, regulations and policies that protect our coastal resources. Facilitating cooperation among these agencies is the Coastal Policy Team. This Team, whose members and alternates represent all of Virginia's Coastal Program partners, provides a forum for discussion of cross-cutting coastal resource management issues.

Virginia's coastal zone encompasses the 29 counties, 17 cities and 42 incorporated towns in "Tidewater Virginia" and all of the waters therein, and out to the three-mile Territorial Sea boundary. The coastal zone includes all of Virginia's Atlantic coast watershed as well as parts of the Chesapeake Bay and Albemarle - Pamlico Sound watersheds. A map of this area is provided [\[Insert map for coastal program\]](#)

Program staff at the Department of Environmental Quality (lead coordinating agency for the networked program) monitors and coordinates the Program's activities and administers the program's annual grant award from the National Oceanic and Atmospheric Administration (NOAA), Office of Ocean and Coastal Resources Management. Since 1986, the Commonwealth has received over \$48 million in federal funds, matched by over \$42 million in state and local funds, to implement the Virginia CZM Program. As a "maximum-funded state" Virginia receives about \$3 million annually (see chapter II-E Funding for Outdoor Recreation and Open Space).

The Virginia Coastal Zone Management Program is part of a national coastal zone management program, a voluntary partnership between the federal government and U.S. coastal states and territories authorized by the Coastal Zone Management Act. The Virginia Coastal Zone Management Program was established in 1986 and is reauthorized every four years by an Executive Order signed by Virginia's incoming Governor. This Executive Order outlines the administration of the program and maps out the responsibilities and mission of the program in a series of goals and objectives. This Executive Order is available on the Program's Web site at <http://www.deq.virginia.gov/coastal/exorder.html>.

Virginia Coastal Zone projects and programs that interface directly with goals and objectives of the VOP include:

- **Conservation corridors** include lands, typically along water bodies, that have been identified as priorities for protecting water quality and habitat or that provide opportunities for connecting these areas. Virginia CZM has helped establish corridors in the Hampton Roads area, and will be providing assistance for developing conservation corridors in the remainder of the Coastal Zone.
- **Regional public access authorities** have been established for the Middle Peninsula and Northern Neck regions and are active in prioritizing access needs and sites and leveraging funds to acquire these sites. Virginia CZM has provided assistance to these authorities

and will be working to establish and assist new authorities in the remainder of the Coastal Zone. Public access is the focus of a two-year project to be undertaken by a NOAA Coastal Management Fellowship Program Coastal Fellow who will work with the Virginia CZM Program and the Middle Peninsula Public Access Authority. The project, which will begin in August 2006, deals with improving public access information availability for the entire coastal zone and developing and implementing public access standards for the Middle Peninsula district.

- **Virginia CZM's Coastal Geospatial and Educational Mapping System (GEMS)** is designed to present maps and information about the best remaining land and water based resources in Virginia's Coastal Zone. The web site for this initiative is due to be launched in 2006 and will be continually updated and improved.
- **The Coastal and Estuarine Land Conservation Program (CELCP)** provides federal funds for acquisition of important coastal lands. Virginia CZM is developing a CELCP Plan that prioritizes lands for acquisition, in coordination with the organizations and agencies involved in land protection and resource protection planning in the Coastal Zone.

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Virginia Coastal Zone Management Program Issue Areas

- Tidal and Nontidal Wetlands
- Fisheries
- Subaqueous Lands
- Dunes
- Point Source Air Pollution
- Point Source Water Pollution
- Nonpoint Source Water Pollution
- Shoreline Sanitation
- Coastal Lands

Geographic Areas of Particular Concern

- spawning/nursery/feeding grounds
- coastal primary sand dunes
- barrier islands
- significant wildlife habitat areas
- significant public recreation areas
- significant sand and gravel resource deposits
- underwater historic resources
- highly erodible/high hazard areas
- waterfront development area

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(subheading) Chesapeake Bay Gateways

Chapter VII. Virginia Watersheds

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VirginiaWatersheds101906.doc

<http://www.baygateways.net>

The Chesapeake Bay Gateways Network is a partnership system of parks, refuges, museums, historic sites and water trails spanning the Chesapeake Bay watershed. This linkage of natural, cultural, historical and recreational sites is designed to help the public access, enjoy, understand and appreciate the natural, cultural, historic and recreational resources and values of the Chesapeake Bay and its tributaries. The program also promotes citizen involvement and stewardship projects at each of the network locations and throughout the Bay watershed. This network is managed as a guide and entry point for experiencing and learning about the Chesapeake Bay. The program represents a partnership not only with sites throughout the Bay watershed, but also with state and local governments to expand understanding and appreciation of the Bay so more citizens will become an integral part in conservation and restoration efforts. The Chesapeake Bay Gateways Network changes how people perceive the Bay by interpreting its resources in a meaningful manner to create a broader commitment to conserve and restore the Bay's natural environment.

Better Site Design is an initiative by the Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance that uses information compiled by the National Site Planning Roundtable to shift the focus of stormwater management away from traditional Best Management Practices, such as stormwater ponds, as the sole means of treating pollutants from urban development. The Better Site Design program adapts 16 of the 22 Model Development Principles developed through the National Site Planning Roundtable in an effort to help localities achieve the three general performance criteria of minimizing land disturbance, preserving indigenous vegetation, and minimizing impervious cover to proactively reduce the amount of runoff, and pollution, generated by new development. By reviewing site plans early on for opportunities to conserve trees; minimize the impacts of parking; promote open space development; reduce setback and street-width requirements; and more, communities can help reduce runoff and the pollutants reaching local waterways long before construction begins. (http://www.cwp.org/pubs_download.htm and <http://www.dcr.virginia.gov/cbla>)

[Begin Box

Add a watershed group list to be included in each PDC area. (SWC maintains liaison w/most all watershed groups in VA via the regional office services.)

End Box]

Chapter VII-H. Environmental and Land Stewardship Education

“The greatest thing we can do, broadly speaking, is teach Virginians the benefits of environmental stewardship...The more we preach the message of river and bay cleanup, the more we pitch the virtues of our Blue Ridge Mountains, and the more we preserve our historic structures, then the more our citizenry will develop an inherent desire to be good stewards of our land, water and air. “ Preston Bryant, Secretary of Natural Resources

Need for environmental and land stewardship education

Environmental and land stewardship education must be incorporated into planning and outreach at all levels of government. An informed citizenry with knowledge of resources and their needs for long-term sustainability are essential to good management and planning for outdoor resource and conservation lands. Local recreation programming, regional restoration efforts like Chesapeake 2000 and statewide programs like Virginia Naturally and Stewardship Virginia all work toward developing more informed communities working for improved stewardship.

The need for these programs and campaigns is evident in results from the National Environmental Education and Training Foundation's (NEETF) research showing most Americans believe they are more aware of environmental issues than they actually may be. In the NEETF study about 80% of Americans surveyed were influenced by incorrect or outdated environmental myths and only 12% of those surveyed passed a quiz on energy. In addition to environmental literacy for adults, the emphasis on standardized testing in public schools leads to limited hands-on environmental education experiences opportunities during field trips to nature centers, local parks and museums. This trend does not improve environmental literacy among students or increase visitation to outdoor education facilities. In Virginia, the Chesapeake 2000 requirement for a meaningful watershed experience for all students somewhat counters this trend by encouraging schools within the watershed to offer at least one hands-on experience for each student before high school graduation.

Research documents that using the *Environment as Integrating Context* (EIC) is directly correlated with improvement of academic achievement in reading, math, science, and social studies (Lieberman & Hoody, 1998). EIC uses a school's surroundings and community as a framework within which students can construct their own learning, guided by teachers and administrators using proven educational practices. There is an urgency and necessity to encourage the use of outdoor facilities for environmental education in order to raise the environmental literacy among students and citizens of all ages. In order to achieve an ethic of outdoor stewardship for our natural, cultural and scenic resources as well as outdoor recreational opportunities, the level of understanding and connection to the out-of-doors must first be elevated throughout the Commonwealth.

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Findings

- Environmental literacy needs to increase among citizens to **begin to** foster stewardship.
- A consistent stream of funding is needed to support environmental literacy efforts in our schools and communities.
- Virginia does not have a coordinated multi-media campaign to promote conservation and stewardship to all citizens.
- A personal connection with nature and the environment achieves long-term stewardship.
- There is a need to correlate outdoor environmental education facilities with Virginia's population.
- Increased support is needed for environmental education training of non-formal education program providers.
- Improved academic achievement is related to hands-on outdoor experiences and environmental education.
- Outdoor classrooms, an appreciation for the natural environment and how these systems work together nurtures students to become well rounded, thinkers and policy makers with an ability to make sound planning and environmental decisions.
- Non-formal outdoor education programs are not always correlated with Standards of Learning (SOLs).
- There is a need to increase Meaningful Watershed Education Experiences (MWEE) offered for K-12 students.
- A comprehensive range of educational media is required to get the conservation message to all who have yet to hear and adopt it.

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Recommendations

- All the state natural resource agencies should partner with Virginia Naturally (community partners) for a multimedia campaign to improve environmental literacy using simple shared messages, clear and achievable calls to action and measurable common goals. We need to highlight the need for conservation

and green infrastructure planning and encourage economic and natural resource sustainability.

- Non-formal environmental education providers should encourage use of the North American Association for Environmental Education (NAAEE) guidelines.
- DEQ & VRUEC will host an annual statewide environmental education conference for non-formal environmental educators.
- Virginia Naturally, State Parks and local site managers will foster use of existing outdoor environmental education facilities.
- Create new or upgrade existing environmental education facilities where needs are found to exist.
- State Agencies should continue support of Stewardship Virginia, Virginia Naturally, Virginia Master Naturalist Program and the Virginia Resource Use Education Council (VRUEC).
- State agencies will support VRUEC Council efforts to promote the use, development and maintenance of non-formal facilities for environmental education.
- State agencies will continue Virginia efforts and work with partner states to implement the environmental education goals identified in the Chesapeake Bay Program's *2000 Chesapeake Bay Agreement*.
- Federal, state, regional and local agencies will provide citizens access to stewardship education and conservation resources.
- Federal, state, regional and local agencies will promote the value and benefits of outdoor experiences and their relationship to environmentally literate citizenry.

Background/history

Baby boomers grew up spending more time outdoors than their children and grandchildren do today. While there are no longitudinal studies to support the claim, many older adults can cite examples—walking to school, biking around town, raising farm animals, or just hanging out “in the woods” or a vacant lot. These direct experiences are personally meaningful and positive influences in their lives.

Studies are now documenting the therapeutic value of nature and benefits of a relationship to other living things such as pets and gardens. The growing body of research links our mental, physical and spiritual health directly to an association with nature and suggests that thoughtful exposure to nature can provide therapy for attention-deficit disorders, depression and obesity. Dr. Richard Louv has coined the term “nature-deficit

disorder” to describe the severed bond between youngsters and the environment. Nature-deficit is not a medical condition but refers to costs of alienation from nature.

Some of the forces that have contributed to alienation from nature include:

- The rise of air conditioning in homes and vehicles
- The increase in electronic and electric-powered recreation (TV, computers, game boys)
-
- Shrinking community open space and private yards
- An increased perception of dangers outdoors
- A fear of litigation and increased insurance costs
- Increased building and environmental regulations
- Community covenants restricting the use of open space

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“...Now is time to be good stewards, to work together in partnership to protect Virginia’s outdoors. Now is time to fulfill our obligation to our children’s children.” Governor Tim Kaine, April 20, 2006

End Textbox]

Land Stewardship

Land stewardship is the foundation of our economic and ecological vitality. Land stewardship is the practice of carefully managing land usage so that natural systems are maintained or enhanced for future generations. Stated another way, effective stewardship maintains and restores the ecological functions that produce the goods and services that we, and future generations, depend upon.

There is a vast body of knowledge related to ecological functions and benefits of natural systems. Understanding how ecosystems work, maintaining living resources and biological diversity, and conserving renewable and non-renewable resources while addressing cultural values and ethics are essential to environmental literacy and land stewardship. These fundamental concepts are included in every grade level K-6, in Virginia’s Standards of Learning for Science (Resource strand). They are further developed in Life Science, Earth Science and Biology, which are taught in the upper grades. Today, more urgently than ever before, people need to understand the connections between our resource use and quality of life, health and economic vitality. The old joke among farmers of the teacher asking the child, "Where does milk come from?" and the child answering, "Safeway," is no longer a surprise. People protect only what they value and will only value what they understand.

Changing Behaviors for Stewardship

Communication and education campaigns have made great strides in spreading awareness of environmental issues. A May 2004 survey conducted by the Chesapeake Bay Program indicated that nine out of ten of the citizens surveyed reported being aware and concerned

about the deterioration of the Bay's health. Almost half – 48% – described themselves as “very concerned.” Yet, when it came to the way many residents reported they **behave** – over-fertilizing lawns, neglecting septic tank maintenance and leaving pet waste to flow into the Bay – nothing had changed.

So, why do these and other educated citizens fail to adopt behaviors that they know effect natural resources? It may be message fatigue. It may be a fog of apathy. It may just be inaction. Dr. Doug McKenzie-Mohr, an environmental psychologist, writes in his book *Fostering Sustainable Behavior* that there is a general lack of willingness for most people to significantly alter their behavior for the sake of the environment alone. His research points out that behavior change rarely occurs as a result of simply providing information. As the Bay survey illustrated, understanding what needs to be done does not always lead to a change in behavior and better environmental practices (*Virginia Coastal Zone Management Magazine*, Spring/Summer 2006 article “Got Message?”).

Social marketing is a tool for affecting change in behaviors. There is a great need for continued education to raise environmental literacy and awareness among the public however where we have been successful in generating awareness but not altering behavior, social marketing offers a means to affect this next step towards environmental stewardship. Alan Andreasen, author of *Marketing Social Change*, defines social marketing as “the application of marketing technologies developed in the commercial sector to the solution of social problems where the bottom line is behavior change.” Examples of how social marketing has been implemented in Virginia include the Bay Program's Chesapeake Club Campaign, a regional partnership to affect change related to lawn care practices in northern Virginia, Maryland and the District of Columbia, which coined the catchy slogan “*Save the Crabs... Then Eat 'Em.*” In this new twist, the campaign uses social marketing to change how residents behave not by appealing to the environmental reasons for not to fertilizing in the spring, but because of the culinary and lifestyle implications. Specifically the message suggests that the behavior of fertilizing in fall will damage a tasty regional icon, the Blue Crab. The campaign is unconventional. It steers away from “preachy” messages and introduces a memorable element of humor. To read the entire article “Got Message?” and learn more about the social marketing techniques used in the Chesapeake Club Social Marketing Campaign go to: www.deq.state.va.us/coastal/documents/magss06-72.pdf, October 2006).

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Learn More About Social Marketing for Stewardship

www.deq.virginia.gov/coastal/neczmpps.htm#social

Download Judy Lander's presentation “Thinking Like a Marketer to Promote Environmental Changes” and a social marketing plan starter.

www.cbsm.com

Illustrates how to use community-based social marketing to design and evaluate programs, including a database of articles, reports, graphics, and case studies.

www.social-marketing.org/

Social Marketing Institute – (Institute headed by Alan Andreason from Georgetown University)

www.greenmediatoolshed.org/

Green Media Toolshed – loaded with environmental social marketing tips, tools, and case studies.

<http://hsc.usf.edu/medicine/ntcsm/TLM/index.htm>

On-line mini course in social marketing.

End Textbox]

Outdoor Environmental Education Facilities

Outdoor recreation and environmental education facilities promote environmental literacy. The Governor’s Advisory Commission on Environmental Education received more than 500 suggestions to their question “how can we improve environmental education?” A group of students responded “Duh—take us outside to learn it.”

A single experience may not change a child’s life or view of nature. A variety of outdoor experiences on a regular basis throughout the primary and secondary years, as well as later in life, will make a difference.

Non-Formal Environmental Educators

Outdoor recreation and environmental education facilities are most often supported by non-formal environmental educators. A non-formal educator is a professional who may not be trained as a classroom teacher, but has an expertise and knowledge of the natural and cultural resources. Non-formal educators most often have specific training in hands on learning and interpretation of the natural environment. Typically, these professionals are employed as naturalists, interpreters and environmental educators. There are two types of environmental education delivery programs most often employed by non-formal environmental educators. The informal program designed to attract visitors may be thought of as an interpretive program. These programs focus on the teaching in an informal setting and are intergenerational engaging adults, families and children. These same non-formal environmental educators work diligently to incorporate the Virginia Standards of Learning into programs for schools and youth classes. While the information conveyed in the formal and informal settings may be similar or the same, the audience of the classroom setting provides a captive audience and the informal setting allows participants to freedom to move in and out of the interpretive program. Both methods of education that take place are equally important. Interpreters in their informal delivery of information reach adults and others who may not otherwise have an opportunity to connect with a school group and classroom programs reach children who may not otherwise have an opportunity to experience the out of doors.

North American Association of Environmental Education (NAEE) Guidelines

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The National Project for Excellence in Environmental Education, initiated by NAAEE in 1993, has developed a series of guidelines that set the standards for environmental education. It is the recommendation of this plan that non-formal environmental education providers should follow, in providing instruction, the NAAEE guidelines. Through the National Project for Excellence in Environmental Education, NAAEE is taking the lead in establishing guidelines for the development of balanced, scientifically accurate, and comprehensive environmental education programs. Quality environmental education programs facilitate the development of an environmentally literate citizenry that can compete in our global economy; has the skills, knowledge, and inclinations to make well-informed choices; and exercises the rights and responsibilities of members of a community. The latest versions of printed materials in the *Guidelines for Excellence* series are posted on the NAAEE website at www.naaee.org.

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The NAAEE Guidelines for Excellence has completed interrelated efforts including the following:

1. *Environmental Education Materials: Guidelines for Excellence*, a set of recommendations for developing and selecting environmental education materials, and a companion publication, *Environmental Education Materials: Guidelines for Excellence - The Workbook* ([HTML](#) and [PDF](#) versions are available), which leads educators, step by step, through the process of using the *Environmental Education Materials: Guidelines for Excellence*.

2. A series of educators' resource guides to quality environmental education materials: *Environmental Education Collection - A Review of Resources for Educators*: Volumes 1,2,3 and The (produced by the *World Wildlife Fund*)

3. Environmental education learner guidelines: *Excellence in EE - Guidelines for Learning (Pre K-12)*, and its companion piece, the *Guidelines for Learning (Pre K-12) - Executive Summary & Self Assessment Tool*, developed to support state and local environmental education efforts by setting expectations for performance and achievement in grades 4, 8, and 12.

4. *Guidelines for the Preparation and Professional Development of Environmental Educators*, a set of recommendations for the preparation and continuing education of teachers and other environmental educators.

5. *Nonformal Environmental Education Programs: Guidelines for Excellence*, a set of recommendations for the design and implementation of comprehensive nonformal environmental education programs.

Source: www.naaee.org

Textbox end]

Virginia Master Naturalist Program

<http://www.viriniamasternaturalist.org/index.html>

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The Virginia Master Naturalist Program is a statewide volunteer training program that is designed to positively impact natural resource education and conservation across Virginia. The program's mission is to develop a corps of well-informed volunteers to provide education, outreach, and service dedicated to the beneficial management of natural resources within their communities.

The Virginia Master Naturalist program is sponsored jointly by *Virginia Cooperative Extension*, the *Virginia Department of Game and Inland Fisheries*, the *Virginia Department of Conservation and Recreation*, the *Virginia Department of Forestry*, and the *Virginia Museum of Natural History*. At the local level, partnerships that include other public agencies, as well as private organizations involved in conservation and education, are a cornerstone of the program.

The program consists of a network of local Virginia Master Naturalist chapters. Each chapter is responsible for recruiting and training volunteers and for working with partners to create and coordinate service opportunities. To become a certified Master Naturalist, an individual must complete a minimum of 40 hours classroom and field training and 40 hours of service. The training consists of covering curriculum objectives that focus on ecology, natural resource management, basic natural history of the animals and plants of Virginia, and skills for teaching and field research. The service component can be in the form of education (such as leading an interpretive program in a state park), citizen science (such as collecting data on wildlife populations), or stewardship (such as restoring a natural area).

This program benefits Virginia's citizenry, its public lands, and its natural resources. The development of a dedicated volunteer corps will expand the capacity of Virginia's natural resource agencies. The cooperative nature of the program provides a mechanism for state, local, non-profit, and other partners to work together towards the common goals of conservation and education. The volunteer service provides a purposeful way for citizens to spend time outdoors while improving Virginia's lands.

Stewardship Virginia

<http://www.dcr.virginia.gov/stewardship/index.htm>

Stewardship Virginia is a statewide campaign that encourages and recognizes volunteer activities that have a tangible impact on Virginia's natural resources. The plan was initiated in 2002. The Department of Conservation and Recreation coordinates the campaign, initiated in 2002 with activities in the spring and fall each year with help from other state natural and historical resources agencies. Citizens and groups organizing a stewardship event may be assisted by the state's natural resource agencies and all participants receive certificates of appreciation signed by the governor.

Each seasonal campaign registers between 150 – 250 community driven stewardship projects with Stewardship Virginia. Funding and partnerships for these projects include corporate donations, involvement of local governments, and colleges and universities with community action organizations. Projects vary but may include waterway adoption,

trail improvement, planting of riparian buffers, invasive species control, habitat improvement and landscaping for conservation.

Stewardship Virginia bolsters efforts of Virginians that are engaged in conservation and encourages more people to become involved. Through community action, the campaign involves volunteers in the out-of-doors and provides opportunities for creating a long-lasting connection with Virginia's natural resources. Stewardship Virginia also encourages citizens of the Commonwealth to connect with land and water to better understand their value.

Virginia Naturally

<http://www.vanaturally.com>

Virginia Naturally is Virginia's gateway to environmental information and resources. Virginia Naturally provides citizens with "one-stop" shopping to programs and information to learn about Virginia's environment. The network of 600 organizations provides environmental education programs and services in Virginia including volunteer and funding opportunities, teacher workshops and lesson plans, conferences, and community events. Adopted in 2000 as the official environmental education initiative of the Commonwealth, Virginia Naturally also recognizes schools and communities who are making extraordinary efforts to help citizens of all ages understand our world and lessen the negative impact on Virginia's natural and historic resources.

Public and private organizations and agencies are the heart of this initiative to link people to Virginia's natural and historic resources. Organizations who are interested in education can become a partner and participate in the statewide network to build knowledge and skills and an appreciation for life-long learning and personal responsibility to conservation. Partners advertise their programs and events on the website and share their success stories. They also receive free materials, a monthly newsletter, educational kits and participate in professional development.

Virginia Resource Use Education Council (VRUEC)

<http://www.vanaturally.com/vruec.html>

The Virginia Resource Use Education Council, VRUEC, membership includes representatives of natural resource agency educators at the state and federal level, Department of Education staff and university professors involved in teacher education. The Council's charter is to promote better understanding and conservation of Virginia's natural resources through education.

In 2000, the Governor Gilmore and the Virginia General Assembly appointed VRUEC members as support staff for the Virginia Naturally program and to establish a committee to coordinate the educational goal of the Chesapeake 2000 Agreement. As a result, the VRUEC hosts two Chesapeake Bay Academies for teachers each summer, issues the Virginia Naturally Classroom Grants, co-hosts the annual Environmental Education conference and coordinates other efforts to further natural resource education in Virginia.

2000 Chesapeake Bay Agreement

<http://www.chesapeakebay.net/agreement.htm>

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The Chesapeake Bay Program's Communications and Education Subcommittee (CESC) works to increase awareness for higher public recognition of the Bay Program and its accomplishments. Goals of the subcommittee include building public understanding and support of the Chesapeake Bay ecosystem as well as promoting restoration efforts and coordinating the public information, education and participation commitments pursuant to the Bay agreement.

In addition, the work of this Bay subcommittee builds and promotes a conservation ethic among residents of the Bay watershed through comprehensive communications efforts including media outreach, education and community engagement. A part of this work focuses on citizen involvement in Bay-related special events including restoration projects and K-12 educational initiatives.

The Chesapeake 2000 Agreement articulates stewardship and community engagement as an area of focus. The work promoted as part of this partnership agreement promotes individual stewardship and assists individuals, community-based organizations, businesses, local governments and schools. The agreement states that every school student in the watershed should have a meaningful Bay or stream outdoor experience before graduation from high school. This goal relates directly to the availability of outdoor educational facilities and programming to address the needs for stewardship, education and community engagement.

NOAA Chesapeake Bay Office

<http://noaa.chesapeakebay.net/>

The NOAA Chesapeake Bay Office works to help protect and restore the Chesapeake Bay through its programs in fisheries management, habitat restoration, coastal observations, and education, and represents NOAA in the Chesapeake Bay Program.

Virginia Natural Resource Leadership Institute

<http://www.virginia.edu/ien/vnrli/index.html>

The VNRLI Mission is to develop leaders in the Commonwealth who can help groups involved in contentious natural resources issues move beyond conflict toward consensus building and collaborative problem solving. The VNRLI Vision Virginia's communities will engage in productive dialogue and collaborative problem solving of natural resource issues important to community sustainability and, thus, be able to effectively manage, conserve, and protect Virginia's natural resources.

Need for outdoor education facilities

The 2006 Virginia Outdoors Survey indicated that 92 percent of those surveyed indicated that access to outdoor recreation is important. In addition the survey indicated that 85

percent of those visiting state parks thought it was important to have nature and education programs. Visiting natural areas ranked fifth on the list of activities enjoyed by citizens. When this statistic is correlated with the interest in educational opportunities desired at state parks, it is assumed there is also a similar interest in environmental education and naturalist interpretation at regional parks and natural areas.

A state parks survey requesting information about facilities for outdoor environmental education and interpretation was completed by 24 of the 34 state parks. All of the state parks responding indicated that the parks engaged interested visitors in interpretive education. Central meeting rooms for large groups were most needed to expand environmental education venues and interpretation in the state parks.

Other informal environmental educators will be surveyed at the annual environmental education conference in Roanoke in September. The results from this survey will be used to assess where in the state outdoor environmental education facilities or improvements to existing facilities are needed.

A map of facilities will be included in this section. Recommendations are needed for other photos, charts and graphs.

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